A Special Double Issue on Bomb Tests

ANUMUKTI

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The Song of Indian Civilisation

Sitting *on a Sand dune in Pokkran*
Tathagata Buddha is smiling.
for two Thousand and five hundred years
he has been singing the mantra
of COMPASSION, of EQUALITY a*nd of* LOVE.

underneath his eyes came hordes of
shaks, *Greeks, Huns, Pathans, Gujjars and* Mughals;
Ghauri came and Khiljee too
ALL w*ho came got drowned in*
this ocean of compassion and became one
"Thost who came as Enemies became friends.

Their voices and their songs,
Their archilecture and their art
Their philosophies and their emotions
All became *suffused by the music of equality And* of
love.

plunderers too came and went leaving not a TRACE.
Sufis came and so did saints
to find a permanent abode WITHin people's heart

Porlugese came and so did the Dutch, French and
English
They lived like *outsiders and eventually left*
Left behind were their ways of thinking

The English went but Englishness remained.

It *remained* in *the life-style*, In t*he language*, In educat*ion;*
In the blind idol worship of armed might.

Then came a poet who sang the songs of world love
And a philosopher who tried to raise humankind towards
the Gods
And a MAHATMA *who loves the English but tried to*
destroy
Englishness
who sacrificed his life to preserve our civilisation.

while today,
even though not just *out but six explosions*
transpire
Beneath the ever smiling EYE*s of* Tathagata
Buddha
explosions that throw dust in our eyes and
make us blind.

The shakti of love is immortal
It shall *overcome hatred, loathing,arrogancei and*
vilolence.
*Love sha*ll emer*ge victorious, Unity* will win
Magnanimity shall TRIUMPH*, the lionhurted shal*l
prevail.
And then once again we shall hear the conch-shells
of a civilisation *that is tolerant*
A culture that has never accepted the defeat of love
before hatred
An enlightenment that has never accepted the defeat of
love before
storms of animosity
The smile on the face of Tathagata Buddha

Narayan
Desai
Translated from the original Hindi by
Surendra Gadekar

LETTERBOX

Tests have heightened tension

A meeting on the nuclear arms race between India and Pakistan was held at MIT. Nearly a hundred people (largely Pakistanis and Indians) attended the meeting. We also circulated the following petition against the nuclearization of South Asia.

We express our deep regret at the recent series of nuclear and missile tests by India and Pakistan, and the general militarization of the region.

Although the two governments have sought to justify the nuclear arms build up in their respective countries in the name of national security, their actions serve only to heighten tensions and increase hostilities in the region.

It is tragic that valuable resources that should be used for the betterment of the people are instead being squandered on weapons of mass destruction.

The nuclear and missile tests undermine the ongoing efforts to forge common bonds of friendship between the two countries by those Indians and Pakistanis who have been able to transcend narrow nationalist propaganda. The jingoistic rhetoric of our leaders notwithstanding, we are determined to work together toward peace and harmony in the region.

Signatures of more than 100 Indian and Pakistani scientists working in various universities in the US.

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The Editor's Desk

The Smile That Makes Generations Sick

he after glow of Opera
tion Shakti lingers on.
Yes, India has done it.
Our scientist and engineers and even our politicians are second to none. Recalls to mind those famous lines coined during the Russo-Turkish War of 1877-78 which gave the English language a word which describes rather well the mood in middie class India today:

We don't want to fight,
yet by jingo, if we do,
We get the ships, we got the men,
And we got the moneey, too!

A chievement at what cost

A nuclear test involves the release into the environment of large quantities of radioactive poisons. Poisons that shall linger on and on; long after the after glow fades; long after the applause and the mutual back-patting fades; long after all the scientists, engineers, and even the evergreen politicians fade; long after historical constucts such as Pakistan, China and even beloved India fade. This deliberate poisoning of our soil and that most precious of all things in a desert—water, shall continue to extract an inevitable toll. Obtaining complete and accurate data on health and environmental effects of nuclear weapons testing is difficult. This is because the principal responsibility of assessing the health and environmental effects of the testing is given to the very agencies that make and test the weapons. These agencies have overwhelming desire for secrecy and the perceive a need to build up nuclear arsenals come what may. In this mindset, it is no wonder that the health and security of one's own citizens is sacrificed at the altar of geo-political considerations. Henry Wasserman very aptly named his book describing US experience with the effects of ionising radiation as "Killing Our Own." Of one thing we can be sure. If it is found that operation Shakti has resulted in radioactive contamination which is a threat to human health, the villagers living in the vicinity are unlikely to be told anything about the fact or asked to take precautions that might reduce their risks. In our persuit of geo-political might. some have to pay the price of development. Modern versions of the ancient custom of human sacrifice for the sake of power and glory can be played to thunderous applause from a nation thirsty for international recognition. When the news first came on 11th May, we all wanted to bring out an issue within a week. Unfortunately it has taken more than seven weeks for us to come to you. We did try to register our protest through the mainstream media by issuing statements, and writing articles. But as has become the nature of the mainstream media, only the voice of the establishment is heard and amplified. The common newspaper readers in the country were fed half truths and lies through reams and reams of newsprint. In the din, the voice of hundreds of academics, journalists, social activists, poets and writers, who organised protests in different parts of the country braving attacks from the saffron stormtroopers and their lackeys, got drowned. The mainstream media gave you one side of the story. We are giving you the other.

Surendra Gadekar

Do Not Forget
Hiroshima and Nagasaki

Fight Nuclearisation of Indian Subcontinent
Through Active Protest

Just Say 'No' To Murder

Dr. ZiA Mian

India and Pakistan have both thought and done the unthinkable. With their nuclear weapons tests they have demonstrated to themselves, to each other, as well as to the world that they are both willing and now able to commit nuclear mass murder.

This was not done with universal consent. There were brave voices who spoke the language of right and wrong, and not that of power within both nations. There was a nucleardebate. But there should have been no need for one.

Nuclear weapons are not weapons in the usual sense of the word. They are devices for genocidal destruction

Nuclear weapons have become the one great exception to the sense that there are some issues that a society should never debate because the issue itself is so unethical. A simple example is that few if any societies would feel it necessary or even acceptable, to have a debate on whether it is right to kill and eat children.

When it comes to nuclear weapons, however, the moral response has been dulled. What is at issue is whether it is right or wrong to want to have, and to want to use, the power to kill hundreds of thousands, perhaps millions of people in the blink of an eye. to maim many more and to poison them so they die slowly and painfully over years from cancers and other illnesses induced by radiation. The experience of Hiroshima should have been enough to convince anyone that nuclear weapons were an affront on humanity. Despite this there has been a world-wide debate about nuclear weapons for over fifty years.

This has happened in large part because nuclear weapons are usually not discussed in moral terms. From the very beginning of the nuclear age there has been a tendency to use language that hides the reality of what is being considered But it is more than simple disguise Language is used as an anaesthetic, as a way to kill feelings. Without feelings, morality dies. These are the first casualties of nuclear weapons

Nowhere is this more evident than among those people whose job it is to deal with these weapons on a daily basis. The American scientists who build the first ever nuclear bomb simply called it the 'Gadget', as if it were just another strange invention rather than the most destructive weapon that had ever been made. When it came time to kill people with these weapons, the scientists and soldiers involved found the most innocuous names possible for the weapons: the bombs that destroyed the Japanese cities of Hiroshima and Nagasaki were called 'Little Boy' and Tat Man'.

This refusal to confront the reality of nuclear weapons is not confined to the United States. It has afflicted every state that has developed them The Soviet Union named its first bomb, the 'Article'. Britain called its first nuclear explosion 'Hurricane', France had (he 'Blue Mouse', and China named its first nuclear weapon simply 'Device 596'.

The same escape can be found closer home; India called its nuclear bomb test in 1974, "Smiling Buddha' and more recently simply 'Shakti'. All of these illustrate what psychologist Robert Jay Lifion has called nuclear numbing, the process by which "we domesticate these [nuclear] weapons in our language and attitudes. Rather than feel their malignant actuality, we render them benign."

Pakistan has its way of talking about its nuclear weapons without really talking about them For more than a decade while it lacked a nuclear bomb that it could name, the debate in Pakistan was only about a nuclear option, or a nuclear capability". There was never a mention of what it was an option for. So used are Pakistan's scientists to a nameless bomb that they have not so far given a name to the nuclear tests.

If the nerve of moral outrage is dulled, there is hope that the sharp prick of knowledge can serve to revive it. Laying out enormity of what is involved in Pakistan's nuclear tests can serve this purpose. Pakistan is believed to have tested a simple nuclear weapon of the kind that was used 52 years ago against Hiroshima In Hiroshima, the atomic bomb killed between 210.00 and 270.000 people, and destroyed more than 90% of the city. Pakistan's nuclear tests were a demonstration that it could do the same thing to one or more of India's major cities The city could be Bombay, or Delhi, or any one of nearly half a dozen others That any of these cities would be largely destroyed is obvious What needs to be faced is how many people would be killed Estimates of the deaths that would result from such an attack vary, but each new estimate is larger than the one that came before. An early estimate was that an attack on Bombay would kill between 103.000 and 265.000 people, while 26,000 - 175.000 would die if Delhi were the target. Later estimates suggested there might be 136.000 deaths in Bombay, and more than 220.000 people injured, while in Delhi, the toll would be

40,700 deaths and 66,900 injured. The most recent estimate, based on the 1991 Indian Census, is that as many as 700,000 people would die in Bombay alone. It hardly needs to be added that since almost half the population of India, like that of Pakistan, is under the age of fifteen, about half of all these deaths would of children.

In the final analysis, a nuclear test

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is about proving you have the power to do this. Becoming a nuclear weapons state, a status both India and Pakistan now claim, means keeping this power. Giving up nuclear weapons means accepting that there is nothing, nothing at all, that could ever justify wanting or having such terrible power,

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Nehru A nd Nuclear Conspiracy

Dr. M. V. Ramana

Nuclear programmes the world over are, and have always been, powerful symbols of State power. In the early history of the Indian nuclear programme, the one political figure who figures repeatedly is Pandit Jawaharlal Nehru, India's first Prime Minister.

Nehru's interest in nuclear power as an example of a scientific enterprise is not surprising. Since his early days in England, Nehru was always convinced of the positive good that could result from science. Addressing the Indian Science Congress in 1938, he emphasised his faith in science as follows: *"The application of science is inevitable and unavoidable for all countries and people today. But something more than its application is necessary. It is the scientific approach, the adventurous and yet the critical temper of science, the capacity to change previous conclusions in the face of new evidence, the reliance on observed fact and not on preconceived theory - all this is necessary not merely for the application of science, but for life itself and the solution of its many problems."*

A central canon in science is openness; but secrecy has become the bane of science. Two reasons can be given for this. First, secrecy in science is unethical. Science does not grow by the intellectual activities of individual scientists, or even of a team of scientists. It is the product of the whole community. It is for this reason that one of the greatest physicists of all time, Sir Isaac Newton said : "If I *have seen further than others, it is because I stand on the shoulders of giants. If one takes information from others, then one must also give"* Second, secrecy hides errors and inefficiencies. In the words of J. D. Bernal : *"With no check from publication and free criticism, the most errant nonsense is likely to receive official sanction. Teaching will become an initiation into mysteries, and science will degenerate into the kind of cabalistic alchemy it was in the decay of the Roman Empire The growth of modern science coincided with a definite rejection of the idea of secrecy."*

Secrecy and the Nuclear Establishment

The Indian nuclear programme which began by envisioning itself as devoted to scientific research violated this canon from its very inception. During Nehru's reign as the Prime Minister, the Indian nuclear establishment progressively insulated itself from outside gaze. Passed shortly after independence, the Atomic Energy Act of April 1948 made atomic energy the exclusive responsibility of the state. In 1958, with the creation of the Atomic Energy Commission, the nuclear establishment succeeded, in increasing its authority. And, finally, on September 15, 1962, the Parliament passed a new Atomic Energy act that granted the chairman of the Atomic Energy Commission the sole authority to initiate, execute, propagate, and control exploration, plan and manufacture of atomic material and its related hardware and all nuclear research and developmental activities. Under Section 18 (i) of this act, the government was empowered to restrict the disclosure of information, whether contained in a document, drawing, photograph, plan, model or in any other form whatsoever, which relates to, represents or illustrates: a) an existing or proposed plant used or proposed to be used for the purpose of producing, developing or using atomic energy, or b) the purpose or method of operation of any such existing or proposed plant, or c) any process operated or

> A central canon in science is openness; but secrecy has become the rule in big science and nuclear technology.

proposed to be operated in any such existing or proposed plant. Section 20 denied any person or organisation not authorised by the A EC to invent or to patent anything which the A EC believes as relating to atomic energy. Section 21 (5) gives the A EC absolute authority over any legal or formal arbitration.

Saha and the Nuclear Establishment

Not only is this secrecy meant to prevent lay persons from knowing what is happening, but also the rest of the scientific community in the country, i.e. outside the nuclear establishment. One of the biggest challenges to the Indian nuclear establishment, and probably the only major challenge to come from the rest of our scientific cadre, came from the famous scientist Meghnad Saha. Saha was an early votary of the application of science and modern industrialised development to India. It has been argued that he may have been one of the first scientists anywhere to realise that atomic energy can be used to generate electricity. Thus, he was certainly not opposed to nuclear energy. What he was opposed to was secrecy and the exclusivity of the Indian Atomic Energy Commission. In particular, he wanted to see universities do research, and be supported in their efforts to do so. on nuclear physics and engineering. During the early 50s. as an elected Member of Parliament, he repeatedly raised this issue on the floor of the Lok Sabha.

Responding to Saha's constant pressure and critiques. Nehru agreed to hold a special conference entitled "The Development of Atomic Energy for Peaceful Purposes in India" on November 26 and 27.1954. For Saha. it was to be a way of addressing the appropriateness of the Atomic Energy Commission's(AEC) strategy. However, the very choice of location - the National Physical Laboratory (NPL) in Delhi - suggested that the die was already cast against him. N PL's director was K S. Krishnan, one of the three founding members of AEC, the other two being Hom i J, Bhabha and S. S. Bhatnagar. In the words of Raja Ramanna, Krishnan would eventually "save the day for us (the A EC)." The bulk of the speakers were from the A EC and the whole conference had the effect of marginalizing Saha and defusing the challenge to the power of the AEC. In his opening remarks at the conference, Nehru clearly defined the technological aspects of nuclear energy as restricted to the state alone though he suggested the possibility that the scientific aspects may be pursued in the universities. All these suggest that Nehru was far from being neutral in his role of arbiter.

Why Secrecy?

While introducing the Atomic Energy Act in 1948. Nehru gave two reasons for the imposition of secrecy: *The advantage of our research would go to others before we even reaped it. and secondly it would become impossible for us to cooperate with any country which is prepared to cooperate with us in this matter, because it will not be prepared for the results of researches to become public* "

To say that the US. Canada, England and so on, from whom we got much of our early nuclear know-how, would steal ideas from Indian research is disingenuous at the very least Further, it is not clear why 'others' should not benefit from our research'. India, after all. was planning to benefit from the results of research carried out by western countries. And. last, if these were to be the only reasons, then the same levels of secrecy should have applied to other fields of science and technology.

> I hope Indian scientists will use the atomic force for constructive purposes. But if India Is threatened she will inevitably try to defend herself by all means at her disposal
>
> *Jawaharlal Nehru*

The answer, perhaps, lies elsewhere.

Nehru and the Bomb

To attempt to understand the reasons for Nehru's support for secrecy in the Indian nuclear establishment, we turn to an early quote of Nehru's dating back to 1946. In a remarkably forthright speech, he said *As long as the world is constituted as it is, every country will have to devise and use the latest scientific devices for its protection I have no doubt that India will develop her scientific researches and I hope Indian scientists will use the atomic force for constructive purposes But if India is threatened she will inevitably try to defend herself by all means at her disposal.''*

This statement reveals several aspects of Nehru's thinking. In 1946 Jess than a year after the bombing of Hiroshima and Nagasaki, it was impossible for anyone thinking about atomic power not to think of its use for defence purposes. But, it is interesting to note that even though India was still a colony of Britain, Nehru envisaged it having potential threats And. implicitly,

in stating what India would do in the future, he also seems to see himself as a statesman and leader of the country.

Nehru's understanding of the dual nature of atomic power seems to have stayed with him. Several years later, on a memo submitted by Bhabha, Nehru is also reported to have written a note to the effect that: "*A part from build-tnn power stations and developing electricity there is always a built-in advantage of de fence use if the need should arise*."

Both these quotes fly against the conventional view of Nehru as one of the foremost votaries of universal nuclear disarmament. Clearly, his activities in the 1950s lends support to this view. All through this period, Nehru was intensely concerned about nuclear disarmament. Being the first to suggest a ban on nuclear testing, he was glad when the limited test ban treaty was signed and welcomed it as a great landmark in history. He also commissioned an official study on the effects of nuclear explosions. Not only did Nehru push for universal nuclear disarmament, but as late as 1961 he had categorically stated in public that India would not produce nuclear weapons "whatever may happen".

As Ashok Kapur points out, there is an ambiguity between Nehru's mistrust of nuclear weapons and his policy of promoting the peaceful applications of nuclear power. Ambiguity does not mean hypocrisy. But, as a leader of a State, Nehru could not perhaps make the choices that he may have chosen as an individual.

This ambiguity is inherent in the whole nuclear enterprise - that something can be developed ostensibly, or even honestly, for peaceful purposes and then put to use for producing weapons. Very early on, this dual nature was explained by Robert Oppenheimer, the head of the Manhattan project that produced the first atomic bombs. In 1946, commenting on a proposal for the international control of nuclear weapons, he wrote : *"We know very well what we would do if we signed such a convention. We would not make atomic weapons, at least not to start with, but we would build enormous plants, and we would design these plants in such a way that they could be converted with the maximum ease and the minimum time delav to the production of atomic weapons saying, this is just in case somebody two-times us; we would stockpile uranium; we would keep as many of our developments secret as possible; we would locate our plants, not where they would do the most good for the production of power but where they would do the most good for protection against enemy attack."*

A few months after Nehru's death, Bhabha pronounced that India was capable of exploding a nuclear device within 18 months. The pronouncement came on the heels of the first Chinese nuclear test. However, given the intricacies involved in manufacturing nuclear explosives, this statement, if true, reveals that much work had been done towards making a bomb even prior to this. The timing also lends credence to the claim that it was Nehru who held back Bhabha's enthusiasm for nuclear tests.

The promised bomb exploded on May 18, 1974 at Pokharan in Rajasthan. The seemingly innocuous choice of words - 'The Buddha is Smiling" - used to inform Mrs. Indira Gandhi, Nehru's daughter and the Prime Minister of India during that period, of the successful explosion is ironical. For, in 1957, during a visit to Japan, standing in front of the Peace Memorial, Nehru said : *"The world must choose between the path of violence symbolised by the atom bomb and the path of peace symbolised by the Buddha."*

The choice is still before each of us.

M V. Ramana

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Theif ! Who Me?

Pakistani operatives reportedly set up fictitious companesand establishe circuitous shipping routes and smuggling operations to collect equipment, technology and data from the United States, China and European nations Including Britain, the Netherlands, West Germany and Switzerland.

Asked today about the allegations, Khan replied, every project is universal and denied Pakistan stole technology or equipment for its nuclear program. He said countries and individuals were willing to sell technology and material to Pakistan despite what he termed 'unnecessary restrictions, a reference to the laws of some nations that prohibit exporting sensitive nuclear material and technology.

'If somebody selfs it to me and makesome profit how can it be stolen?" Khan asked.

Hey Ram : The Last Shot

Dr Vinay Lal

This year, as India marked the 50th anniversary of the assassi nation of Mahatm a Gandhi, the 'lather of the Nation has finally been liquidated. In 1974, less than three years after concluding a victorious war with Pakistan. India exploded what was called a "peaceful nuclear device", as though even its nuclear explosions had to carry some of the burden of Gandhi's non-violence. For the subsequent 24 years, India exercised virtuous restraint, but it has now broken the self-imposed moratorium with a series of five nuclear tests over the last few days. Writing to Clinton and other political leaders, the Indian Prime Minister, Atal Bihari Vajpayee, pointed to the "deteliorating security environment" in South Asia, and the aggressive designs of its two principal neighbours, China and Pakistan, as providing India with a sufficient warrant for seeking to acquire nuclear deterrence. The political party over which Vajpayee presides. which draws some of its membership from other political associations that were implicated in the assassination of Gandhi fifty years ago and which have over been the ardent champions of Hindu ascendancy, has finally removed the specter of Gandhi which has been haunting India's modernizing elite. The Indian nation-state will no longer live in consummate fear of Gandhi's critiques of modernity, big science, instrumental rationality, development, war. and masculinity

While economists, foreign policy experts, and defence specialists will continue to debate the reasons that led India to carry our nuclear testing at this particular juncture, the cost to India of economic sanctions, the possible escalation of an arms race, the palpable failures of American foreign policy and intelligence gathering, and the geopolitical consequences of South Asia's nuclearization, there are other. more interesting and poignant, considerations to which we should be attentive. During the height of the Cold War. Nehru attempted to place India in a 'third camp' and place it at the helm of the leadership of the non-aligned movement. This was even, in some measure, a continuation of Gandhi's policy of repudiating realpolitik. The non-aligned movement, however, would become increasingly irrelevant, until the fall of the Soviet Union rendered it obsolete, and some commentators have consequently interpreted the nuclear tests as India's cry for attention. Clinton appeared to have echoed this view when he noted that India, perhaps lacking in self-esteem, thought itself "under-appreciated" as a "world power".

The history of India's nuclear tests extends back, in a manner of speaking, to the early days of India under colonial rule. The British w ere apt to describe Indians as an "effeminate" people, leading lives of indolence and womanly softness; following the rebellion of 1857-58, the entire country was divided between "martial" and "non-martial" races. One response was to embrace a certain kind of hyper-masculinity, which would enable Indians to be construed as a people just as "manly" as the British Indians have never been able to live down the taunt of "effeminacy". and those who know of the cultural nuances of South Asian history are aware that some Indians imagine Pakistani Muslims as a meat-eating, virile, robust, and martial race. It is a telling fact that the first comment of Balasaheb Thackeray, the chauvinist leader of the militantly Hindu Shiv Sena party who is an open

Goodbye Gandhi

Fifty years age we took leave of Gandhi
For he was a symbol of the moral power of the nation.

Seeing us at fault
He would cry "Halt"
While returning a debt,
he wouls calculate not
what use the neighbour would make of it.

Being freed of debts
he would try to be righteous

when we opposed the NPT
our theme was righteouness
with what face were bundles upon bundles to desist
while armed with bundles upon bundles of bombs.

The first principle with bundles upon bundles of bombs.
before holding a mirror to others.

when we turned away from CTBT
There were still some sheads of virtue left
what is the point of merely banning testing
while doing nothing about stockpiling

and refining never weapons.

Fifty years!
Today we present you Operation shakti
Having bid a final goodbye to neeti

what strength is there where there is no life
what shakti is there where there is no Neeti

Narayan Desai

Translated from the original Hindi by surendra Gadekar

admirer of Hitler, upon hearing of the tests was, "We have to prove that we are not eunuchs."

By signaling its departure from the body of world opinion, India has sought to arrive on the world stage. It is the one resounding cruelty of our times that no nation-state which refuses to partake in realpolitik and the brutal zero-sum politics of our times can receive much of a hearing. The recent nuclear tests may represent the shallow triumph of India as a nation-state, but they signify the saddening defeat of India as a civilization, an irony made all the more bitter by the posturing in which Vajpayee's Bharatiya Janata Party engages as the vanguard of "Hindu civilization". True bravery and courage consist, not in an empty renunciation of what is not possible, but in forsaking the military force that one has at one's command. Thus might what Gandhi called "non-violence of the weak", which is no non-violence at all, be transformed into "non-violence of the strong", and from India's descent into nuclear madness might some good emerge.

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Making Money The Nuke Way

When Tensing Norkay and Edmund Hillary 'conquered' Mt. Everest in 1953, I was just six years old. Yet I remember the excitement. The highest mountain in the whole world had been laid low through human ingenuity, dedication and hard work. After their return from the top of the world, Hillary and Tensing were deservedly treated as heroes. They were just about everywhere, on the covers of magazines and in radio broadcasts.

Leave aside names, can you recall just how many people climbed Everest last year? Or the year before? I wonder if anybody can except perhaps the keeper of records at the Himalayan Mountaineering Institute. The total number who have been there by now must be running into hundreds though it is still probably less than the more than 2000 nuclear explosions that have been conducted in scores of places all over the world so far.

Not that climbing the Everest is a cakewalk. I can't do it even on a bet. But still as far as recognition for achievement goes Everest isn't Everest anymore. And rightly so, because human spirit recognises no boundaries — No ultimate pinnacle.

That is why the spectacle of Dr Abdul Kalam and Dr R. Chidambaram being feted like Tensing and Hillary is so strange and amusing. It is not a symbol of our scientific sophistication that it is made out to be but rather of our scientific naivette and ignorance. After all the first thermonuclear test took place on November 1, 1952, that is a few months before the first ascent on Everest.

One can understand the eagerness of the political establishment to bask in the reflected glory of this 'scientific achievement'. They have other more sinister agendas to accomplish and all the Jai Vigyan euphoria will come in handy.

But what of the scientists themselves? Wasn't it their duty as scientists to use the opportunity presented by being in the focus of national attention to help in the creation of a scientific temper? The first step in such an enterprise would be to make realistic assessment of what had been achieved and a clear enunciation of further goals. That would have at least cooled the hysteria, maybe even saved some blood for uses better than as a substitute for ink! Instead we have interviews claiming that three simultaneous tests were some kind of a "world record".

Besides being in questionable taste, these claims are just not true and salvo explosions of the kind that India conducted were the norm rather than the exception in both Soviet and US testing programmes. The Soviets in fact once conducted eight explosions simultaneously for all the good it did them in terms of "national security".

Why so much hype? The scientists may not be the supermen they would like to project themselves, but neither are they fools They do realise that inflated claims diminishes their credibility in the world scientific community. But they are willing to pay the price for a purpose. And that purpose as always is money. Lots of money.

Recall the situation before May 11, 1998. The nuclear establishment stood discredited. Accidents like the fire at Narora. the flooding of Kakrapar and the collapse, (sorry delamination) of the dome at Kaiga had delaminated their claims of safety. The performance or rather the persistent non-performance of the reactors had put nine out of ten reactors in India, amongst the fifty worst reactors world wide. Funding for nuclear projects was declining and so was the clout of the nucleocrats in corridors of power.

And then suddenly five flashes in the desert and the frog has turned into a Prince Charming sweeping the country off its feet and into a fairyland. All dreamlands in kaliyuga charge hefty admission tickets. No! old nucleocrats assure

THE BANALITY OF EVIL

Achin Vanark

The small and angry minority of anti-nuclearists in India can take some solace from the fact that they are needed now more than ever. They represent the other side of an ongoing discourse and will be around as long as nuclear weapons remain on the face of this earth or that earth itself becomes no longer humanly habitable. The political folly of taking this decision to go nuclear is something that I have been arguing in numerous ways for over a decade. There will be occasion to do so many times again, especially when the shadow of the Pakistan bomb falls on those who can currently only see the 'glow' of the Indian bomb. Here I wish, for a change, to focus on that dimension which has been utterly and contemptuously disregarded by all who supported the testing-the moral question.

The universal glorification of this 'scientific achievement' and the congratulations from all quarters showered on the scientists responsible is nothing less than obscene. Many greater scientists possessing moral courage and integrity of a much higher order, will simply be appalled. Those of the past like Einstein and Oppenhiemer who were horrified by what their endorsement of, and association with, the production of the first atomic weapon had done, and spent the rest of their lives opposing this new evil, will now be turning over in their graves. So sensitive were they to the unique evil represented by such weapons that they insisted not only that what they had earlier justified (needed to fight Hitler) was wrong but that any future production of such weapons be it in the name of national security, or whatever, could never be justified. Joseph Rotblat. recent Nobel prizewinner, simply walked away from the Manhattan Project. Indeed, as they pointed out. if the scientists of the world exercising an independent moral conscience simply refused to make such weapons for their political masters, the world would be free forever of such evil

A starry-eyed idealism one might say? Once the first bomb appeared other countries fell compelled to do the same One cannot as strongly blame later scientists for not all having the same moral courage as these scientists-dissidents or for doing as they were told by their political masters. This is true enough, and condemning the scientists responsible for carrying out these Pokhran tests is misplaced and not what is being called for The issue is the obscenity of glorifying this supposed feat and claiming it to be a scientific accomplishment worthy of evoking national pride. One could have understood it if the supporters of this testing had said that they were fully aware of this

The universal glorification of this 'scientific achievement' and the congratulations from all quarters showered on the scientists responsible Is nothing less than obscene. Many greater scientists possessing moral courage and integrity of a much higher order, will simply be appalled. Those of the past like Einstein who were horrified by what their endorsement of, and association with, the production of the first atomic weapon had done will now be turning over in their graves.

us. the price is cheap Only Rs one crore per bang. For a country where thousands of crores get swindled in scams every other year such a claim might seem a ridiculously low price to pay for the security of sleeping well at night knowing that your nuclear weapons were out there deterring their nuclear weapons from coming and frying you to a crisp.

We have been down this road before. In the early years of independence Dr. Bhabha using his considerable public relations skills had overcome the opposition of scientists like Dr Meghnad Saha and manipulated the political establishment towards the dead end of the peaceful atom black hole.

What was implied was that more than half the total research budget of the country being invested into the dream of too cheap to meter and plentiful nuclear energy

Besides, the dream also demanded that there be no bureaucratic interference or oversight of any kind. The cloak afforded by secrecy, in the name of national security could be used to cover multiple sins like corruption, non-performance and just plain rubbish science.

By skilful manipulation of the eagerness of the political leadership to play a big brother role with 'big bombs', nucleocrats hope to bring back those bygone days.

It is for the scientists of sense to get together and prevent this hijacking. Indian science cannot afford a second shot in the foot

Surendra Gadekar

moral dimension but that it had to be subordinated to national security considerations. Or that they were forced to produce these weapons because of the threat possessed by others and therefore had to misuse national scientific capacities (as others had earlier done) to produce them. Or that they grieved because instead of using our wonderful pool of scientists and their skills for truly worthwhile endeavours they had to be wasted for producing something which is so evil by the very nature of their being weapons of mass destruction that they must never be used!

One is not demanding here, that those who supported these tests withdraw their support. On the contrary, one is asking the question why not one politician, not one party, not one strategic expert, and so few journalists among all those who supported the stand of the Indian government could nonetheless not even think of making the only honest and accurate characterisation of the relationship between science and nuclear weapons! To have refrained from praising this misuse, to have called it an unfortunate, even if necessary, abuse of science and scientific knowledge and skill would have been to exhibit a real moral sensitivity and balance, to recognise the distinctive dilemmas posed for any country which decides to go in for such weapons and for anybody who rationalises such possession. The view that this act deserved to be praised as a scientific 'accomplishment' was so widespread and so 'natural' that to think otherwise was made to appear immoral and unpatriotic! What an incredible state of affairs and what a statement of the moral character and fibre of our strategic and political elite and of their upper and middle class supporters! Most of them at least, unlike the more perplexed poor, cannot be accused of not knowing what kinds of weapons these are.

And yet the view that anti-nuclearists are morally superior people to pro-nuclearists is simplistic and inaccurate. The problem is more fundamental and frightening. It is not because people who are more morally insensitive than others will somehow naturally gravitate to being pro-nuclear but the other way around. Ordinary people who are naturally moral and sensitive are made much more insensitive by accepting the ideology and practice of nuclearism. The immorality is built into the very nature of nuclear strategic discourse and practice. Nuclear deterrence is a deeply immoral doctrine. The defence of it is always immoral. Persistent involvement in this discourse debases a nation, above all the nuclear elite and its support base. Moral hypocrisy cannot be avoided. It gets institutionalised and repeatedly surfaces over a whole range of arguments, claims and policy postures. There is the hypocrisy of claiming that nuclear arming by a 'good' country will promote nuclear disarmament and, of course, all national nuclear elites regard their own country as 'good'. A more recent hypocrisy will be shown by those in India who screamed that the NPT and CTBT discriminate between nuclear haves and have-nots but will now say India should sign these as a nuclear weapons state. The NPT is discriminatory, the CTBT is not, but let us leave that aside for the moment. Terrible as it is, the central issue is not the moral hypocrisy of nuclear strategic discourse. Nor is it even the strategic and political incoherence of nuclear deterrence thinking Now that more people will be forced to think more seriously than ever before on this issue, the strategic-political dividing line will be between those who continue to believe that such deterrence works and those who recognise that it is incoherent, self-contradictory and degenerative in the logic it imposes on the relations between hostile, nuclearly equipped rivals - hence an unavoidable arms race and growing nuclear tension.

It is another inescapable dilemma that is the crux. The pursuit of national nuclear security is simply not compatible with the pursuit at the same time of universal global disarmament. Some pro-nuclearists pretend to themselves and others that it is. The more straightforward of the pro-nuclearists have simply said we can never have complete global nuclear disarmament which is a mirage. However, it isn't. Humans have the capacity to undo this unnecessary evil but to do so they have to abandon the political stupidity and the immorality of deterrence thinking. As long as it holds we are doomed to having the shadow of the nuclear holocaust always upon us. We will not move towards total disarmament through notions of proportionate disarmament so that 'security deterrence' is always presumably maintained till all the nuclear weapons states simultaneously reach the point of complete disarmament. The moral breakthrough has to come first-to think differently and reject deterrence-in order to make the political breakthrough towards institutionalising an irreversible process culminating in total disarmament.

Einstein pointed out the dilemma long ago-" the coming of nuclear weapons has changed everything but the way we think." Moral commitment, integrity, and courage are the need of the hour and the struggle to realise these values is the only way to overcome our fundamental evils be they apartheid, colonialism or nuclearism. The growth and spread of pro-nuclearists reflects the triumph, through banality, of evil

Achin Vanaik is an antinuclear activist and a political commentator based in Delhi

Pound of Flesh

Finance Minister Yashwant Sinha began his maiden budget speech by stressing that the Pokhran tests were the 'first step" towards building a new, strong and self-reliant India." Plan allocation for the Department of Atomic Energy (DAE) in the budget has been inceased by a hefty 68 per

Protest and Survive

In this issue of Anumukti we have argued that the nuclear debate is immoral But having said that one cannot shirk the challenge to debate. For it is a debate for the very soul of India and Pakistan Despite what pusillanimous mainstream political parties in both countries think, permanent mutual hostility requiring ever sophisticated and destructive armaments is not the only possible state of being.

Despite the moral argument against nuclear weapons, in the states that have built these weapons there has been public support for them. This public support has been built by creating a sense of crisis and fear. People are told that there is an enemy and the bomb is the only defense. In an atmosphere of absolute conflict, peace is ruled out.

There is also no doubt that the overwhelming elite support for nuclear weapons in India and Pakistan is shared by large numbers of ordinary people Nationwide celebration of nuclear tests in both countries is sufficient to prove this This level of support, according to opinion polls, has not changed for over a decade. This is remarkable. In one of the most tumultuous periods in the region's history, where governments came and went, economic policies changed, the Cold War ended, the Soviet Union collapsed, sanctions were imposed on Pakistan because of its nuclear weapons programme, nuclear weapons have remained beyond question.

There are two reasons behind this massive and inert support for nuclear weapons. The first is that most people know little if anything about nuclear issues This is an obvious inference from polling data showing that support for nuclear weapons in both countries is constant regardless of educational attainment From the illiterate to those having only a basic education to those with degrees, about the same proportion of them support these weapons. There is rarely such unanimity except w hen based on a shared ignorance. In the absence of information, there is no incentive to change one's mind. There is. indeed, no reason to even think about changing one's mind.

That the nuclear debate is starved of information is evident, one only has to look at newspapers, magazines and electronic media. There is never more than assertion that nuclear weapons are vital This is the second reason for the strong and enduring support for nuclear weapons For over a decade, the people have had heard nothing but repeated public declarations by all sorts of political and military leaders that nuclear weapons were vital for the national interest When things are presented in this way it is evident that many people will conclude nuclear weapons are the last and only hope

But nuclear weapons need enemies to make them worthwhile For decades, India and Pakistan have been projected as absolute and unremittingly hostile enemies, without scruple, willing to exploit every opportunity. The other is the source of everything that goes wrong in Pakistan and India. Any challenge to the status quo is interpreted as a foreign inspired conspiracy against national security

The final and darkest element in manufacturing a national consensus in support of nuclear weapons is maintaining ignorance That it is at work can be seen in the deliberate orchestration of hate by sections of the media against individuals and groups who argue against nuclear weapons Debate that might inform people about alternative ways of thinking is not only discouraged, it is not tolerated

An example from each country should suffice.

Letter from Dr Zia Mian

"I have received serious and disturbing news from one of my closest friends in Pakistan. Dr A.H Nayyar (Associate Professor of Physics at Quaid-i-Azam University in Islamabad). Nayyar, is one of the handful of real peace activists in Pakistan, and has been among the most significant and active during the horrors of the last few weeks

> *The hope of intellectual independence is to resist, and the necessary first step in resistance is to discover how the institutional grip is laid upon our mind.*
>
> ***Mary Douglas***
> ***How Institutions Think***

"At a press conference today (June 2. 1998) organised in a hotel in Islamabad by the Pakistan-India Peoples Forum for Peace and Democracy. A.H Nayyar. Fqbal Ahmad and Samina Ahmad (no relation) were supposed to talk about the current nuclear crisis in South Asia

'About 50-60 journalists attended the press conference and most were hostile Instead of questions from the floor, there were long inflammatory statements attacking the speakers. Then 10 to 15 young

men belonging to Shabab-e-Milli (the youth wing of the Jamaat-i-Islami, a right wing Islam ist Party) burst in with banners and placards denouncing the speakers. They then started to shout slogans. A journalist, who has demonstrated his hostility towards peace activists on earlier occassions (most notably at a public meeting held in Feb 1996), attacked A.H. Nayyar. The Shabab-e-Milli members joined the attack. In Nayyar's words "I got a good beating by fists, kicks and chairs, but suffered only a few minor bruises." Some of the other journalists intervened, at which time the speakers were escorted to a safe place by the hotel staff. After the meeting, some of the journalists were also beaten up by the Shabab members.

The first victim of nuclaer weapons is always conscience,

Zia Mian

Letter from Shri Bhanu Das

"At a meeting organised by Peoples Union for Civil Liberties (PUCL), Congress for Democracy and Centre for Education and Documentation (CED), I had been invited to speak as a physicist and a democratic rights activist, but I had to turn down the invitation as I was one of the principal organizers of another meeting at the same time. Two of the speakers, A.K.N.Reddy, an expert on energy studies and Hasan Mansur from PUCL are retired academics. The audience was made up of primarily academics and intellectuals. The Hindu Jagaran Vedike an RSS front, decided to target this meeting. The RSS storm troopers actually prevented the meeting from taking place for a while. Some of the people in the audience told me that they were on the verge of being physically attacked by those goons. The organisers had to call the mobile police to resume the meeting. Indeed the RSS which had been quiet for the last few years is now beginning to show its true colours. The message to me is clear—the fight against nukes in India is inextricably linked to the fight against Hindu communalism.

Bhanu Das

'Secular' Hindus seem to have given up the fight for the Hindu mind by default. Today we have a strange doctrinal and intolerant masquerade of Hinduism promulgated by the likes of Vishwa Hindu Parishad and Bajarang Dal as the dominant face of 'resurgent' Hinduism. It is imperative to realise that one needs to fight not to loose the "patiriotic" space by a similar default.

Therefore, news of protest meetings and actions from different parts of the country and even from the Indian diaspora in other countries in which a few hundred people each have participated are so welcome. Mainstream newspapers have downplayed such events by giving them only local coverage. That is why there is dire need for better communications between these spontaneously arising groups in different parts of the country. More concerted action will not only educate the people regarding the truth about nuclear weapons it will also send a strong political message to the people who have perpetrated this outrage that it is not all gain no pain. There is a domestic political price to be paid for reckless adventurism.

Surendra Gadekar

Reports of Protest Actions from Horn e and A broad

Below we give a summary of some of the reports that have come to us from friends about these actions. Some of the countries leading intellectuals and prominent citizens have participated in these programmes. No doubt there have been other events in other towns and cities in the country from where we have not received any reports.

Protest Against BJP's Despotic Designs

Payyanur,May 16,1998

The Peringome Anti-nuclear Forum strongly protested against the nuclear tests at Pokhran. Hundreds of activists took out a procession at Payyanur town on 16.05.98 shouting slogans. Later a largely attended public meeting was held at the bus stand square in which Dr. D. Surendranath, Mr. N. Subrahmanyan and Mr. K. Ramachandran spoke. The speakers held that the BJP Govt., by harping on chauvinistic national sentiments and directing people's ire against neighbouring countries, was trying to promote hatred and jingoism. They condemned the militraisation of the Asian region and warned against an escalating nuclear arms race. Any nuclear programme, either for 'peace' or for war, cannot promote national security or general welfare; on the contrary it can promote secrecy, mutual suspicion and despotism.

Students, Teachers Form Solidarity For Peace

Hyderabad, May 23,1998

Leading academic, intellectuals, human rights activists, journalists and writers from Andhra Pradesh have condemned the recently conducted nuclear tests describing them as 'anti-people' and indicative of the fascist designs of the Bharatiya Janata Party-led government. Presiding over an anti-nuclear weapons conference, organised here last night by Solidarity for Peace, a forum of students of the Hyderabad Central University Prof G Haragopal, vice-president of the Andhra Pradesh Civil Liberties Committee (APCLC) and head of the human rights department of the university, said going nuclear would only lead the country to greater

centralisation of powers in the hands of politicians, technocrats, bureaucrats and security forces and pauperise, subjugate and render helpless the common people. A PCLC president M T Khan, speaking on the social political and cultural fall-out of the nuclear tests, quoted Prime Minister Atal Behari Vajpayee's statement that we would sacrifice every thing for the country's security. "What it means is that the BJP would sacrifice human rights and dub any people's movement, dissent and struggles for life as anti-national." he added. Mr Khan said the jingoism of the BJP leaders suited politicians of Pakistan equally as the cry of patriotism would help them repress any form of dissent Prof Rama Melkote of Osmania University questioned the propriety of the state assuming monopoly over violence and weapons and pointed out that internal security of the state was as important as external security. She said nuclear weapons cannot ensure the security of the country, pointing out the case of the former Soviet Union, which despite having a large stock of nuclear weapons, collapsed under its own weight. She said the welfare of the people and integrating them were a greater guarantee for the security of a country. Leading environmentalist Purushottam Reddy wanted a total ban on nuclear establishments in the country. Prof S G Kulkarni condemned the militarisation of science and technology and stressed the need for advancement in science and technology for solving the problems of the people. He alleged that the ruling party leaders and technocrats were hand in glove in nuclearising the country which would only promote a dictatorial government which took shelter behind secrecy. Prof Probal Dasgupta said there was nothing to gloat about the nuclear tests as our scientists had only duplicated the technology available elsewhere. A PCLC general secretary K Balagopal called upon all the concerned citizens to launch a campaign to concientizc mass opinion against nuclearisation.

Indians, Pakistanis Protest N.Tests

Montreal June 13, 1998

"For a lasting peace in South Asia!" "No to nuclear tests[0] Raising these slogans, a group of about 100 demonstrated in Montreal

The assembly was called by the South Asian Women's Community Centre (SA WCC) and CERAS (Centre d'etudes et recherches sur Pasie du sud). SAWCC is a service, support and advocacy organization for South Asian women and their families in the Montreal area. CERAS is a nongovernmental organization which works with grassroots organizations in Pakistan, India, Bangladesh, Sri Lanka and Nepal in the areas of development, gender, health, peace and secularism A third of the group were of Pakistani origin, another third were of Indian origin and the rest were individuals concerned with peace. The demonstration commenced to the strains of "Sangam' the collaborative effort of Pakistan's late Nusrat Pateh Ali Khan and India's Javed Akhtar.

During the demonstration, various individuals spoke Naushad Siddiqun. Humeira Iqtidar and Dolores Chew denounced the tests. They also said that the nuclear club of five, including the United States, had no right to hypocritically criticize India and Pakistan, while they maintained a nuclear arsenal and carried out tests themselves Dolores Chew said that the tests had generated nationalistic fervour in India and Pakistan In India this w as the deliberate intention of the BJP goverment, in its bid to garner wider support by diverting attention from their fundamentalist past and present.

The demonstrators were informed of an attack on Dr. A.H. Nayyar of the Pakistan-India Peace Forum by the Shabab-e-Milli in Islamabad, Anand Patwardhan, internationally-renwned documentary filmmaker and 200 others belonging to the Anubam Virodhi Andolan. who were demonstrating in Bombay, were lathi-charged by the police who invoked See 144 Many were also, arrested. In Bangalore, a meeting of scientists was disrupted and broken up by BJP supporters

Those assembled wanted to send a strong message to the governments of India and Pakistan that as non-resident Indians and Pakistanis they could work together and support peace initiatives that had begun under the previous Indian govemment and were being galvanized at the grassroots by the Pakistan-India Peace Form

Convention A gainst Nuclear Weapons

New Delhi, 9th June, 1998

In a rare expression of unanimity, eminent speakers from diverse walks of life unequivocally condemned the BJP-led Governments decision to conduct nuclear tests, at a Convention organised in New Delhi on 9th June. The Convention was attended by over 400 people representing academicians, scientists, defence experts, journalists, lawyers, artists and leaders of political parties.

Prof. Rajni Kothari, in his opening remarks as Chairperson of the Convention, said that the Government had resurrected the prospect of Armageddon. He said that the whole concept of viewing nuclear weapons as instruments of deterrence was morally abhorrent and dangerous. The Indian Government's action may well accelerate the global arms race. He expressed his apprehension that it was actually the RSS which is running the present Government, and the explosions at Pokhran should be viewed in the context of the RSS's quest for dominance. This, he felt, made the tests doubly dangerous, as nuclear weapons in the hands of a RSS run Government is fraught with far greater dangerous consequences.

Sri N Ram, Editor of Frontline, termed the tests as "Right Wing adventurism of the most dangerous kind" which would "profoundly affect the terms of the nation's engagement with the region and the world". He said that the tests and subsequent "sabre-rattling statements" by ministers had led to the internationalisation of the Kashmir issue. He felt that there are clear signals that the Government's position would rapidly move from one of adventurism to appeasement and even surrender towards the interests of Imperialist powers.

In an evocative and emotional address Admiral Ramdas (former chief of Navy) said that the aftermath of the Pokhran blasts, in some ways, marked a "turning point in his life". He described himself as a person who had spent 45 years of his life in uniform and one who had been an integral part of policy formulation in defence related matters. He was deeply disturbed at the turn of events and said that the tests have "cast an evil shadow over the sub-continent". He categorically stated that no matter what the compulsions were, there was no justification for India deciding to go nuclear. He said that as a career defence person he could visualise how. "so many things can go wrong with nuclear weapons", leading to a disastrous nuclear conflagration. Instead of enhancing national security, Admiral Ramdas felt that the Governments action had only enhanced the threshold for the possibility of things going wrong. Nobody really had a clue, he said, about the implications of a nuclear weaponisation programme, for Command and Control systems. Who, he queried will have his fingers on the nuclear button—the Prime Minister, the Army Chief, the BJP Chief or the RSS? He dubbed the pronouncements by ministers as those of "babes in the wood who had found a new toy" and apprehended that a nuclear holocaust was a real possibility. As a result of an accelerated arms race, the people would have to pay the penalty in the form of cuts in expenditure on Health, Education and other Social Sectors. He said that it was imperative for India and Pakistan to get together immediately and put a cap on their respective nuclear programmes. He said that "we are all fighters here, and we need to fight for peace", and get the public in both India and Pakistan to understand about the disastrous consequences of a nuclear conflict so that they can pressurise their respective Governments.

Dr.Ashok Mitra said that he felt ashamed as an Indian after the tests. Drawing a parallel with the demolition of the Babri Masjid in 1992. he said that the tests were an attempt by the BJP to create a frenzy in order to divert the attention of the people from real issues. He said that India and Pakistan, in an accelerated arms race, can exhaust their national incomes but would end up in merely maintaining the same levels of relative defence preparedness. By exploding the "swadeshi bomb" the BJP Govt, had actually opened the floodgates for foreign domination over the economy. Foreign banks and companies are now to be allowed to remit their earnings unfettered to their parent companies. He was afraid that the South East Asian syndrome—where foreign speculators played havoc with domestic currencies— may now extend to South Asia.

Dr.T.Jayraman (Indian Instt. of Mathematical Sciences, Madras) and Dr.Satyajit Rath (National Institute of Immunology, Delhi) decried the attempts to use patent falsehoods and half truths as scientific arguments, in order to justify the "inevitability" of the nuclear tests by India. They felt that much of the debate on the issue has been ill-informed and has failed to focus on the real effects of a nuclear war. Dr.Jayraman said that the DAE and DRDO were party to the overturning of the national consensus against exercising the nuclear option. He said that India's scientific capabilities have little to do with its ability to conduct nuclear explosions He said, for example, it takes a much higher degree of S&T capability to maintain a satellite in geostationary orbit to augment communication facilities, than to produce a missile with a nuclear warhead that can accurately reach its target.

Prof. Prabhat Patnaik, in an incisive attack on the tests, termed them as an "astonishing act of stupidity". He felt that the tests and their aftermath will be used by the Government to accelerate the neo-liberal thrust of the economy, where we shall see MNCs lording over the economy. He saw in the nuclear tests another move in the direction towards "disenfranchisement of the poor— politically and economically", A typical way, he felt, of a fascist political formation trying to establish its hold over the country. He said that there has been a major move by fascistic forces to manufacture a "popular mood" in favour of the Government's policy. He said that the need of the hour was not to "kowtow" to the so called popular mood but to stand n clear opposition to the diabolic designs of the BJP Government and its cohorts.

Prabir Purkavastha

The Threat of Accidental Annihilation

Peter Feaver

Most public analyses of the South Asian nuclear standoff have focused on the dangers of an arms race and the possibility that one side will launch a surprise attack to settle (he Kashmir problem. These are serious concerns, but they are not the biggest danger.

Arms races are expensive and wasteful, but they are rarely dangerous in and of themselves....

Rather, the biggest danger in the new situation is the uncertainty over how safe and secure the Pakistani and Indian arsenals will be against accidental and unauthorized use. In other words, what we really should worry about is that India or Pakistan might find themselves "using" the weapons whether they intended to or not.

Accidents can happen because the design of the nuclear weapon itself is faulty or because the systems and procedures used to launch or drop the weapons lack safeguards. Unauthorized use can happen if those who are tasked with using the weapons under authorized conditions have the ability to use them regardless of whether they are given an authoritative order.

All arsenals contain inherent risks of accidental or unauthorized use because it is expensive, difficult, and sometimes impossible to avoid risks without rendering the arsenal itself unusable under appropriate circumstances.

A nuclear command and control system that is optimised for use under authorised conditions is, of necessity, a system prone to accidental or unauthorised use. A system optimized against accidental or unauthorized use runs the risk of not being available for authorized use, especially after suffering a surprise attack.

This is the nuclear surety problem: making sure weapons are always ready for use when needed, but never detonated accidentally or by unauthorized personnel.

There is a silly theory fashionable in some circles that we don't need **to** worry about this. Pakistan and India w ill worry about nuclear surety themselves, optimists aver, and will naturally solve the problem.

Such wishful thinking shows astonishing ignorance of US and Soviet nuclear history. The Cold War record of numerous near-accidents and close calls proves that military establishments will tolerate extraordinary risks of accidental and unauthorised use to ensure the weapons will be available for deliberate use, if needed.

These near-accidents were the direct result of compromises made on nuclear surety questions. Tolerating the risks of airborne alerts to achieve a maximum show of force here, failure to install nuclear safety devices for fear it would unnecessarily complicate a launch under duress there

This is the root nuclear dilemma Although a nuclear surprise attack is a very unlikely scenario, it is one against which military planners must prepare. To prepare against it. they must take steps that increase the likelihood of accidental or unauthorized use

Continued on page 17

Not Just Academic Scare-Mongering

At 02:26:00on 3rd June 1980, at Offut Airforce Base in Nebraska the alarm went off on video screens used to track path of incoming missiles. Two Soviet SLBMs were inbound from North Atlantic.

In addition to calling the Pentagon for more information, the controller also alerted bomber and missile crews. *The incoming missile counter was clicking up missile tracks so fast that within seconds, hundreds appeared to have been launched. NORAD duty officers searched their independent early warning system for some confirmation of the attack. When none was found, controllers held a threat assessment and agreed the problem was a fauit in NORAD's com-*
puter relay system. The alert ended 02:29:12 It had lasted three minites and twelve seconds.

Unlike the more than half hour flying time for missiles between! the US and Soviet Union, the flying time for missiles in the India-Pakistan theater is likely to be less than 7 minutes. We need to have fool proof and MilwOrm proof computers and technicians not only in India but Pakistan as well to escape accidental annihilation

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New Meanings for Commonly Understood Old Words

M. V. Ramana

India's now famous linkage be tween nuclear testing and the birthday of the great apostle of peace, Gautama Buddha, reflects not only political crassness but also a propensity to find hypocritical in-tcipietahons toi noble sentiments Indulging in such double-speak is just another affirmation of India having internalized the forms of thinking and expression prevalent in the gang of nations that lead the way in terrorizing the world with their military arsenals -De the nuclear weapon slates

Nuclear Disarmament

When speaking of nuclear matters, it there is one phrase Indian officials use more often than nuclear weapons, it must be nuclear disarmament India had a time-bound plan for nuclear disarmament, the CIBT did not lead to nuclear disarmament and everything we were doing was to promote nuclear disarmament

Bogically, therefore, in the full official press statement following the tests, the statement "India remains committed to a speedy process of nuclear disarmament" had to be included It was

Two days later two more tests were conducted Evidently the Indian government thinks that commitment to nuclear disarmament means conducting nuclear explosions at a speedy pace

Some what like a habitual drunkard who thinks that the way to abstinence is by quickly finishing the bottle

Nuclear Status

Soon after these tests, Prime Minister Vajpayee announced that India had declared itself a Nuclear Weapon State (with a big bomb) This was a rare moment of truth, though for many of us an unpleasant one Now, thankfully, analysts in the United States can stop coming up with new adjectives to describe India's status threshold nuclear state, de-facto nuclear weapon state, nuclear-capable state, and so on Neither do they need to apply these terms to Pakistan Now Israel remains the only state with more than 200 'ghost bombs'

Nuclear Weapon

However, Vajpayee followed this statement with a new interpretation of the role of nuclear weapons in international affairs He said, "ours will never be weapons of aggression ". This is a complete perversion of history Nuclear weapons are quintessentially weapons of genocide The 'big bomb' that India now has can kill, in a matter of instants, hundreds of thousands of people, and many more in the years that follow No State invests huge amounts of resources to produce them if it never plans to use them The question is not whether they are used first or in response to someone else's use In either case, an act of aggression - killing innocent civilians-will be conducted And, the Prime M mister's statement the follow ing day - that India will not hesitate to use nuclear weapons if its defences were threatened - makes it amply clear that these bombs are intended for use

World's Largest Democracy

By going on from one momentous decision to the next at breathtaking speed, the BJP government has also given us a new definition of democracy The history of a nation of nearly a billion people, and in all likelihood the histories of the neighbouring nations as well has been changed by decisions made literally by a handful of people Plans for the test are believed to have been known only to the Prime Minister, the defence minister George Fernandes, principal secretary to Prime Minister, Brajesh Mishra, political adviser Pramod Mahajan, scientific adviser to Prime Minister A P J Abdul Kalam, and Atomic Energy Commission chief R Chidambaram This follows well in the tradition of the 1974 test Then the decision to test was

believed to be known only to Mrs Indira Gandhi, her principal secretary P N Haksar, secretary P N Dhar, B D Nag Choudhury, Atomic Energy Commission chief H N Sethna.and Raja Ram anna, leader of the team of scientists that carried out the test at Pokhran

CIA Disinformation Campaign

The BJP is, of course, a past master in the art of redefining words. No one could have forgotten how the party. b> forcefully demolishing the Babri Masjid, found new interpretations for secularism and communal harmony. Not to be outdone in this pursuit are the various other political parties that have had an equal hand in determining India's nuclear posture.

As is now amply clear, the assertions by the Congress Government in 1995 that they were not planning any nuclear test were simply false. Also false was the assertion reprinted dutifully in a number of newspapers all of whom prefer to 'patriotically' pass on government handouts, that this was part of a "CIA disinformation campaign''.

Gujarat Doctrine

The former Prime Minister himself admitted styly that test preparations had been going on during his tenure with the statement, "You can make out whatever you want to know from the fact that a nuclear test cannot be done overnight."

By and large, opposition parties have stuck to mealy-mouthed responses and trying to protect their own patriotic credentials by congratulating our scientists profusely. At best they have questioned the timing of the tests and the right of a minority government to take this decision. These are valid questions indeed. But, they stop way short of any comment, critical or otherwise, about the tests themselves.

This is not surprising. During the CTBT debate, they were falling over one another in defending India's nuclear option against "western treaties" Having done that they have boxed themselves into a corner, where they could not really question the tests in any meaningful manner.

Peaceful Uses of Atomic Energy

The scientific establishment, particularly the Department of Atomic Energy, by testing a range of sophisticated weaponry has shown that our "peaceful nuclear programme" has been busy reinventing the meaning of the adjective peaceful. Once again, we have to be thankful that they did not further denigrate that term by calling these tests peaceful nuclear explosions

Great Power

There is another sense in which declaring India a nuclear weapon state may reflect an uncomfortable truth The current five nuclear weapon states have been the biggest bullies around.

They have used their nuclear weapons on numerous occasions, not by dropping it but by threatening to drop them *on* those opposing their will. The US. of course, leads the pack both in terms of the number of threats it has issued, and by its heinous attacks on Hiroshima and Nagasaki.

By its repeated demands to be recognized as a great power, and making it clear that by power it meant the kind of power that the five nuclear weapon states have (and not for example, the kind of monetary power that Japan and Germany have), or the moral influence India used to have in the early days *of* independence. India has also shown its own desire for this role

The nuclear weapon states, of course, do not want to have India join their club. They argue, quae hypocritically, that they, and they alone, have a need for (and a right to) these genocidal weapons It is sad that when faced with this hypocrisy, India has decided to join them rather than fight them Bytaking the high moral road *of* abstinence. or now. renunciation, it could lead the way to a nuclear weapon free world. The chances of that, unfortunately, are low

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Accidental Annihilation

Continued from page 15

During 50 years of Cold War experimentation, the United States and the Soviet Union adopted technical fixes like coded-locks buried inside the war head and administrative measures like the two-man rule. These steps went far to reduce the nuclear surety problem

Indeed, ongoing concerns about nuclear surety, not fears of an arms rate or of deliberate use, arc the primary impetus behind recent proposals to reduce US and Russian arsenals even further

India and Pakistan have proved that they have the ability to detonate a weapon, but they are neophytes when it comes to nuclear surety. If the United States and the Soviet Union engaged in risky behaviour, even though they had virtually unlimited funds and technical expertise to throw at the nuclear surety problem, how can we be confident that the cash strapped Indians and Pakistanis will be more conscientious?

We can't be, and that is what people should really worry about

Peter Feaver, who has studied and written extensively on nuclear command and control, is an assistant professor of political science at Duke University in Durham N.

At the Makeshift Aid Station

You girls-
weeping even though there is no place for tears to come from :
crying out even though you have no lips to shape the words;
reaching out even though there is no skin on your fingers
to grasp with—
you girls

Oozing blood and greasy sweat and lymph, Your limbs twitch.
puffed to slits, your eyes glitter whitely;
only the elastic bands of your panties hold in your swollen bellies
though your private are exposed you are
wholly beyond shame:
to think
that a little while ago
you all were pretty schoolgirls

Emerging from the flames that flickered gloomily
in burned-out Hiroshima
no longer yourselves.
you rushed out, crawled out one after the other,
struggled along to this grassy spot,
in agony laid your heads, bald but for a few wisps of hair,
on the ground.

why must you suffer like this?
why must you suffer like this?
For what reason?
For what reason?
you girls
don't know
how desperate your condition,
how far transformed from human

You are simple thinking,
thinking
of those who until this morning
were your fathers, mothers, brothers, sisters
(would any of them know you now?)
and the homes in which you slept, woke etc.
(in that instant the hedgeroses were torn off; who knows
what became of their ashes?)
thinking, thinking —
as you lie among friends who one after the other
stop moving —
thinking
of when you were girls
human beings

TOGE SANKICHI
Translated from Japanese by Richard H. Minear
Atomic Ghost; Poets Respond to the Nuclear Age

WHEN YOU GROW UP, YOU MUST NEVER LET THIS HAPPEN AGAIN !!

An Estim ate of Indian Nuclear Weapons'Capability

Since its first nuclear test at Pokaran in 1974, India has made about 25 plutonium metal cores for nuclear bombs, according to data obtained by Nucleonics Week from sources inside India's nuclear weapons development programme.

This figure corresponds with some of the lower range estimates cited publicly in recent weeks. But it is much lower than figures of 60-80 or even higher that have also been published erroneously.

Bomb cores, the actual explosive devices, should not to be equated automatically with militarily usable weapons (e.g.. bombs for aircraft or warheads for missiles). It is not known how many of the cores have been incorporated into actual weapons, if any.

Other data obtained from Indian weapons programme sources indicate the following:

- - India's Department of Atomic Energy (DAE) began producing the bomb cores soon after the 1974 test, as ordered by the Prime Minister's Office. During the last two decades, there has been only one pause in otherwise steady production of the cores. The timing and duration of that pause is not known.

- - Most of the plutonium for the bomb cores was produced by the Cirus and Dhruva research reactors at the Bhabha Atomic Research Institute (BARG) Production has taken place at BARC's secret radiometallurgy laboratory

- - The cores are spherically shaped for use in implosion nuclear bombs. Most or all of the cores arc identical or very similar to that exploded by India in 1974 at the Pokaran test site. The cores were manufactured at BARC for a "reference design" which is very close or identical to that tested in 1974.

This plutonium weapon design, which at most minor modifications, was apparently re-tested at Pokaran last month, is an effort to get more information about it which could be used as a data base in case India follows through on its announced intention to agree to a test ban.

The "reference design" would be a "medium-sized" nuclear bomb, smaller than a bomb India tested last month which used at least a small amount of thermonuclear material. As has been widely reported. India also tested several much smaller devices last month

The Department of Atomic Energy (DAE), which makes India's plutonium, and the Defense Research and Development Organization (DRDO). are now analyzing the results of India's May test series Depending on the results, India may recast the plutonium bomb cores it has already made for the "reference design" bomb and use the metal for production of the newer, freshly -tested devices,

- - All the bomb cores are in the hands of the DAE None of them, and no plutonium. have been turned over to the Indian Ministry of Defence. Western officials confirm that this statement is consistent with their assumptions that India, as yet. has no official military deployment strategy for use of nuclear weapons. Indian sources have stated that Defence Minister George Fernandes himself only found out about the nuclear tests two days before they were conducted,

Critical questions regarding India's nuclear capabilities remain unanswered Among them:

1) How much plutonium does India have for its bomb programme?

The Indian sources would not say how much plutonium was required for a device of the "reference" type. Western analysts estimate that the amount required is likely between five and ten kilograms, depending on design efficiency and production losses. This suggests that the cores India has made account for between 125 and 250 kilograms of plutonium This would account for somewhere between close to half and three-quarters of DAE's total inventory of weapon-grade plutonium. which amounts to very roughly 300 kilo grams

2) How much plutonium is being added to India's current stockpile?

The primary source for India's weapons material stockpile is the 100-MW (thermal) Dhruva reactor, a modern, well-maintained facility that stands outside of International Atomic Energs Agency (IAEA) safeguards and monitoring Assuming the facility is operating between 60% and 70° o of the time — as it was during a 1993 four by the author, and little has changed since Dhruva would be producing about 20 kilograms to *25* kilograms of weapons-grade plutonium per year. That would be enough for between three and five more bombs of the "reference" type each year

India's other mam source for the weapons programme, the Cirus unit it imported from Canada in 1955. is capable of producing up to 10 kilograms weapons-grade plutonium more to this stockpile per year However, the Cirus reactor has been shut down now, and for the foreseeable future due to ongoing problems, and must be rebuilt first It may be at least 18 months before it could resume operation for plutonium production

By Mark Hibbs
Nucleonics Week June 17. 1998
From Nuclear Watch
Center for War. Peace, and the News Media

Nuclear Watch is written exclusively for the Global Beat, an online resource service for journalists sponsored by the Center for War, Peace, and the News Media at New York University

Nuclear Deterrence: A Dangerous Illusion.

By Commander Robert Green, Royal Navy (Retd)

I served in the Royal Navy for twenty years from 1962-82. Asa Fleet Air Arm Observer (navigator and weapon system operator), I flew Buccaneer carrier-borne nuclear strike jets from 1968 to 72; and for the next five years in anti-submarine warfare (ASW) helicopters equipped with the WE-177 Nuclear Depth Bomb (NI.)B). As one of four nuclear crew in a Buccaneer squadron, my pilot and I were assigned a target from NATO's Single Integrated Operational Plan, and were ordered to plan to attack it with a free-fall WE-177 thermo-nuclcar bomb.

Nuclear Versus Conventional Deterrence Between States

NDB were withdrawn from the Royal Navy in 1992. By then, new conventional ASW weapons had been developed which were able to neutralise all currently envisaged naval targets. Indeed, as far as the USA is concerned

"There is nothing it could do with nuclear weapons that it cannot do with modern conventional weapons."

Modern industrial states, increasingly interdependent on multinational conglomerates, the globalisation of trade and sensitive to public opinion, are increasingly constrained from going to war with each other. But even if the argument is not accepted, there is a fundamental logical objection to relying on nuclear deterrence. Although the risk of conventional deterrence failing is greater, the damage would be confined to the belligerent States - and the environmental damage would usually be reparable. What is at stake from deterrence failing between nuclear weapon Slates is the devastation and poisoning of not just the belligerent powers, but potentially of all forms of life on the planet. Meanwhile, retention of nuclear arsenals encourages proliferation of the problem, and with it this unacceptable risk.

Falklands War

In my last appointment as Staff Officer (Intelligence) to Commander-in-Chief of the Fleet, I helped to provide round-the-clock intelligence support to British forces in the Falklands War. I know what a close-run thing that war was. If Argentine aircraft had sunk one of the main troopship before the landing force had got ashore, the British might have had to withdraw. What would Thatcher have done[0] Polaris had clearly not deterred Galtieri from invading. With victory in his grasp, it is doubtful that he would have believed Thatcher even if she would have seriously threatened a nuclear strike on Argentina. Yet rumours abounded that a Polaris submarine has been moved south within range of Buenos Airs. If she had so threatened, my assessment was that he would have very publicly called her bluff and relished watching Reagan try to rein her in. And in the last resort, it is likely that the Polaris Commanding Officer would have either refused the order or faked a malfunction, and returned to face the court martial.

Gulf War

My scepticism over nuclear deterrence grew when the Berlin Wall came down; but it took the Gulf War to make me break out of my pro-nuclear brainwashing. As the first ex-RN Commander with nuclear weapon experience to speak out against them, it was very traumatic.

In the run-up to the Gulf War, mymilitary intelligence training warned me that the US-led coalition's blitzkrieg/punitive expedition strategy would give Saddam Hussein the pretext he needed to attack Israel • an undeclared nuclear weapon State. If thereby Israel was drawn into the conflict, this might split the coalition. If not, he still stood to gain widespread Arab support for being the first Arab leader for years to take on the Israelis.

My great fear was that the Iraqi leader would be provoked enough to attack Israel with chemical-headed Scud missiles. Knowing that West German technical support was involved in the warhead design, Israel's Prime Minister Shamir would come under massive pressure to retaliate with a nuclear strike on Baghdad. Iraq had the best anti-nuclear bunkers Western technology could provide; but even if Saddam did not survive, what would happen next? With Baghdad a radioactive ruin, the entire Arab world would erupt in fury against Israel and her friends: there would be terror bombing in every allied capital; Israel's security would be destroyed forever; and Russia would be sucked in.

The first Scud attack hit Tel Aviv on the night of January 18. 1991. For the first time, the second most important city of a *de-facto* nuclear State had been attacked and its capital threatened. Worse, the aggressor did not promise Shamir anything in return for not retaliating - fortunately, the warhead was conventional high explosive, and causalities were light. The Israeli people, cowering in gas-masks in their basements, learned that night that their nuclear "deterrent" had failed in its primary purpose. Some 38 more Scud attacks followed.

Meanwhile, in Britain the IRA just missed wiping out the entire Gulf War Cabinet with a mortar bomb attack from a van near Whitehall. They were not deterred by Polaris - yet a more direct threat to the government could barely be imagined.

Nuclear Deterrence Won't Work Against Terrorists

To my surprise, in 1993 the British Secretary of State for Defence agreed with me. In a keynote speech on 16 November at the Centre for Defence Studies in King's College. London entitled "UK Defence

Strategy: A Continuing Role for Nuclear Weapons?". Malcolm Rifkind almost agonised over the problem:

' I have to say that it is difficult to he confident that an intended deterrent would work in the way intended, in the absence of an established deterrent relationship... Would the threat be understood in the deterrent way in which it was intended; and might it have some unpredictable and perhaps counter-productive consequence ? Categorical answers to these questions
might be hard to come by. and in their absence that utility of the deterrent threat as a basis for policy and action would necessarily be in doubt it is difficult to see deterrence operating securely against proliferators "

By an "established deterrent relationship" presumably he meant the unstable, irrational balance of terror beiween two trigger - happy, paranoid power blocs - otherwise known as the Cold War. Its inherent instability was evidenced by the inevitable struggle for "escalation dominance." More than 50.000 nuclear warheads was the ridiculous result; while health, education, and other services that make up civilised society deteriorated on both sides through lack of resources

With the break-up of the Soviet Union and an unchecked arms trade, it is only a matter of time before terrorisis get a nuclear weapon. They are the most likely "proliferators", because nuclear blackmail is the ultimate expression of megalomania and terrorism. Yet nuclear deterrence cannot be relied upon against such threats.

The most important underlying point to make here is that the surest way to minimise the chance of a nuclear hijack is to stop treating the Bomb as a top asset in the security business and the ultimate political virility symbol.

This nightmare will intensity as long as the five permanent members of the UN Security Council insist on the Bomb to "guarantee" their ultimate security -when in fact it does the exact opposite - while trying to deny it to other States Such a policy of nuclear apartheid is hypocritical and un-sustamable.

Nuclear Deterrence Undermines Democracy

Democracy depends on responsible use of political and military power, with leaders held accountable to the will of the majority of the people. If a democratic nation is forced to use State-sanctioned violence to defend itself, its leaders must stay within recognised moral and legal limits

Democracy within a nuclear weapon state is inevitably eroded by the need for security and tight control of equipment, technology and personnel. When I became a nuclear crew in Buccaneers. I was given a special security clearance before being told never to discuss the nuclear role, even with other aircrew in my squadron, let alone my family It was considered such an honour - only the four best crews were chosen - that no-one questioned it

As Senior Observer of Sea King ASW helicopter squadron in the carrier HMS EAGLE in 1973-74. I had to train the other Observers how to use a thermo-nuclear depth bomb (NDB). The speed and depth advantage of the latest Soviet nuclear submarines over NATO air-launched ASW torpedoes was such that it had been concluded that only an NDB could be guaranteed to destroy them. Now this was just to protect our carrier, not last-ditch defence of the motherland Moreover the Observer would have had to press the button to release it - not the Prime Minister, as they are so fond of claiming There was "Lowv High Yield" switch low yield was about 5 kilotons. and high yield over 10 kilotons - Hiroshima was not much more than that Worse, this would definitely be a suicide mission. because our helicopter was too slow to escape before detonation. For good measure, such an attack would vaporise a huge chunk of ocean, cause heavy radioactive fallout (both from the NDB and the nuclear submarine reactor and any nuclear - tipped torpedoes it carried), and also cause the underwater sonic equivalent to Electro-Magnetic Pulse - quite apart from escalating World War 8 to nuclear holocaust

Yet all these concerns were brushed aside when. I raised them. I was simply told not to worn . and get on with it. So I did but I began torealise that nuclear weapons were militarily useless; and that my leaders - both military and political - were placing me in a position where I could fall foul of the Nuremberg Charter However, the old British military tradition of the Charge of the Light Brigade in the Crimean War, as immortalised by Tennyson, was alive and well

"Theirs not to reason why, theirs but to do and die."

Nuclear Deterrence Undermines Security:

The Falklands and Gulf Wars taught me that competing unilateral security leads to more insecurity, both for others and ultimately oneself We need a new understanding of security one that sees it as a safety net forall, not a "win or lose" military game which leaves the underlying problems which caused the war unresolved, and feeds the arms trade. True security lies in fostering a just, sustainable world order

Notice

We have numbered this issue of Anumukti as Volume 11 Number 5 and 6. Whereas by right this would have been Volume 10 Number 5 and 6 That Is how far back we have fallen
What we intend to do is to keep
bringing Anumukti on time from now on and keep publishing all the missing numbers one by one as time permits so that within a year or so we will

Sanctions or Sanctioned?

In the euphoria that followed the May 11 nuclear tests, one of the causes for self congratulation by Indian nuclear establishment was the fact that US intelligence had failed to detect test preparations. Much newsprint was spent describing details of the various steps Indian 'scientists' had undertaken to hoodwink the all pervasive network of spy satellites and ground based agents. But the ways in which the world-wide US empire is run are not always straightforward and open. Suppose for a moment that the Indian government did have prior permission of US administration to go ahead and have their detonations. This would account for the total failure of US intelligence (comprising multiple and redundant spying agencies: CIA, DIA, NSA, NRO, State's Poli-M il, etc.) to provide advance public warning. It is indeed difficult to imagine that all of them were sleeping on the job especially after BJP had declared time and again that they would proceed to exercise the nuclear option.

> Rather than apply sanctions, American policy should move from treating India and Pakistan as the problem to incorporating them into the solution as partners in a non-proliferation regime,"
>
> *Henry Kissinger*

Seen from the cynical point of view which often characterises the US government there are certain advantages to the tests But first we must understand the position from the US point of view as it obtained before May 11, 1998. Both India and Pakistan were known to possess nuclear weapons but their actual weapons capabilities were unknown. Secondly both the governments had through repeated statements and overblown rhetoric painted themselves in a position where it was impossible for either of them to sign international nuclear control agreements like the Comprehensive Test Ban Treaty or the Nuclear Nonproliferation Treaty. As a consequence, it was impossible to sell cither country 'peaceful' nuclear technology whose markets in the developed world were saturated and whose very survival was at stake in the absence of fresh orders from the 'developing' world.

The Tests have

1. 'Smoked' out two closet nuclear weapons states into the open where the level of expertise of their weaponisation programme can be properly assessed and then capped as part of the normalisation process.
2. Reduced India's manoeuvrability in international relations and forced it to take a belligerent attitude towards China. This is in line with the US plans to encircle and isolate China which is now emerging as an industrial and military giant in its own right.
3. Treed the US from its legal requirement to put an end to its own testing. There is a strong lobby in the US which feels that continued tests are necessary to ensure the safety and reliability of the US nuclear deterrence.
4. Made India offer more concessions to US business and multinationals as a way of countering sanctions.
5. After a decent interval, as part of a process of' normalisation', hitherto "discriminatory" treaties can be signed from a so-called "position of strength" and the way would then be opened for sale of "peaceful" nuclear technology to the region.

Is it a wonder that with so much to gain US intelligence services suddenly develop blind spots!

Surendra Gadekar

LETTERBOX

We must not lose sight of the central facts of our situation The nuclear weapons states have weapons of mass destruction. The country in which 1 live is the possessor of the most modern and sophisticated arsenal of weapons of mass destruction on the planet and is the only nation ever to have dropped nuclear bombs on cities. It has used weapons of mass destruction when its elites believed that their goals would be served by doing so. Unfortunately, I have little doubt that they would do so again.

In their statements concerning India and Pakistan, the NWS have given no indication that they intend to change their policies concerning retention of weapons of mass destruction. Their mentions of disarmament and of their purported compliance with NPT Article VI obligations have shown little perceptible movement from their statements at the NPT Prepcomm prior to the India and Pakistan tests.

The strategy of the NWS appears to be to exert the maximum amount of pressure on India and Pakistan to freeze their nuclear capabilities at the current level that the NWS can bring to bear without committing to any negotiating forum or course of action which could provide an opportunity to focus attention on the nuclear arsenals and policies of the existing nuclear weapons states In the end, it also appears likely that the NWS — or at least some of them — would prefer an outcome in which the nuclear weapons status of India and Pakistan somehow are "normalized," with the NWS appearing to their own populations to have made satisfactory efforts to contain the new arms race, than to have an outcome which forces the NWS onto any path which might actually lead to the abolition of nuclear weapons. It would not be surprising to discover that quiet negotiations are in progress seeking just such a face-saving solution to the current crisis. Such a result might leave current political elites once more feeling safely in control, but would leave the other five billion or so of us in a far more dangerous world.

There is no magic negotiating strategy or set of steps we can urge the NWS to follow, because the elites who control military policy in the nuclear weapons states do not share our goals. The only path which shows promise is the effort to build a truly international movement which has the social power to hold all nuclear weapons states, declared, undeclared, and aspiring, to account. We must ask for exactly what we want, and build the social movement to get it.

Andrew Lichierman < alichterman@igc.apc.org>

The Environmental Effects of Underground Testing

There have been almost 1,400 underground tests during the period from 1957 to 1989 at various sites around the world. Underground tests have been conducted at nine sites in the United States and over 50 in the Soviet Union. In addition. France has conducted underground tests at two sites in the Pacific and at one in Africa. China has conducted them at its testing range at Lop Nor in Sinkiang Province. India has conducted six in Rajasthan while Pakistan has conducted six in Balochistan..

The total vield of the approximate!) 500 Soviet underground tests is about 31 megatons, and that of about 730 U.S. underground tests is about 37 megatons. The other countries do not add much to the total explosive conlent of underground tests, which is approximatel) 71 megatons.

The systematic and rountine injection of long-lived radionuclides (fission and activation products as well as unfissioned plutonium-239) into the underground environment has produced an increasing inventory of radioactive substances. The possibility persists of serious contamination of another important segment of the earth's biosphere, the underground environment, where water is tapped for human use at ever increasing depths and in ever more remote areas of the world.

Assuming a fission yield of about 0.1 megacurie per megaton for stronnum-90 and 0.16 megacurie per megaton for cesium-137. and unfissioned plutonium-239 amounting to 150 curies per nuclear test, we can calculate the cumulative inventories of these three long-lived materials underground. Assuming that about one-fourth of the cesium and strontium has decayed away so far (since underground tests are of more recent occurrence than atmospheric tests, less of the fission-product radioactivity has decayed away the decay corrected inventories ofthe radionuclides would be approximately as follows:

Strontium-90 5.3 million curies
Cesium-137 84million curies
Plutonium-239 0.2 million curies

In addition to these three, there are substantial quantities of activation products, as well as other long-lived fission products such as technetium-99 Carbon-14, which is formed by absorbtion of neuirons by nitrogen and is a major contaminant in atmospheric testing is not such a big cause for worry in underground testing since the nitrogen content in the underground environment, is generally much lower

Silicon and aluminum, common constituents of soil, and manganese, an important trace element taken up by plants, form radioactive isotopes through neutron capture However, their half-lives are only 2.6 hours 2.3 minutes, and 2.6 hours, respectively Therefore, they arc not important sources of radiation beyond a few hours after an underground test In the following we will look in some detail at effects of testing in the US, Soviet Union and by French in the Pacific since there is some data available on these Other countries have not provided any data on the effects caused by their testing programmes.

US Underground Testing

Underground testing has often resulted in prompt releases of radioactivity to the atmosphere, mainly through accidental venting In the U S underground nuclear weapons testing programme, it has been estimated that between 1957 and 1970, 25. 3 million curies of radioactive fission products were released to the atmosphere from 30 underground tests. The venting of Baneberry alone, in 1970. injected 67 million curies of radioactive fission and actvaiton products into the environment Between 1970 and 1988. it has been estimated that 54.000 curies have been released as a result of 126 underground tests of 126 releases, four were containment failures, four were late-time seeps. 10 were controlled tunnel purgings. and 108 were "operational" (intentional) releases

The following is a list of some significant venting incidents reported by the U S Congressional Office of Technology Assessment (1989) (the quantity of radioactivity is normalized to 12 hours after the test)

Test name and year	Radioactivity in million curies
Plane. 1962	19
Ecl. 1962	19
Des Moines. 1962	11
Baneberry. 1970	6 7
26 other teste	38

Underground nuclear tests leave behind a large volume of crumbled rock and radioactive materials. Assuming a total yield of U S underground tests of 37 megatons and that one-fourth of the strontium-90 and cesium-137 have decayed away, approximately 2 8 million curies of strontium-90,4 4 million curies of cesium-137. and 110,000 curies of plutonium-239 remain in the environment

The long-term dangers arising from wastes in the underground environment have not yet been carefully assessed. According to Eisenvbud (1987) *The quantities of debris involved are huge, but obtective evaluation of potential long-range ricks has not been possible because little of the basic data*

have been made available.

Soviet Nuclear Testing

The Soviet Union has conducted its 503 underground tests at many locations in its territory. The multiple explosion sites mean that underground contamination potentially affects more territory and larger populations and constitutes a greater threat to future generations in the Soviet Union than in any other country.

The Tsyb Commission considered only the seismic impact of underground explosions. It did not discuss venting of radioactive materials from underground tests.

Tokhtarov presented some data regarding emissions from undertround nuclear explosions. The first and perhaps largest release occurred in January 1965, from a nuclear explosion to excavate a water reservoir at the confluence of the Chagan and Ashisu rivers. His estimate of radiation levels "at traditional pastures and watering places" was 50 millirocntgens per hour, though the time after the explosion at which this level prevailed is not specified. The thyroid dose to children was estimated at 53 rems and the bone dose at 15 rems.

Tokhtarov noted that prior to 1980 underground nuclear tests in the Soviet Union were conducted at shallow depths, and he implied that venting was the rule rather than the exception. According to the report, the military admits that about 30 percent of underground explosions at the test site (or about 100 tests) were followed by the release of radioactive gases. Also cited were three cases of venting in the late 1980s, despite the fact that these tests were conducted at depths of 500 to 600 meters: on May 7,1987, the radiation level in Semipalatinsk reached 350 to 500 micro-roentgens per hour; on September 18, 1987, the radiation level was 45 microrocntgens per hour; and on February 13, 1989, the radiation level at the village of Chagan was 3,200 micro-roentgens per hour. (Typical natural background radiation is on the order of 10 microrocntgens per hour).

There were over 200 atmospheric tests and over 500 underground tests on Soviet territory. The available evidence points to the conclusion that protection of public health and the environment was scant, even compared to other nuclear weapons states. Environmental measurements of radiation, dosimetry, and tracking of exposed populations made public so far are inadequate to provide a good picture of population exposures. Medical data are insufficient to describe accurately cancer incidence or other measures of radiation effect.

Estimated inventories of selected radionuclides due to underground Soviet tests (Decay-Corrected)

Radionuclide	Inventory
Strontium-90	2.3 million curies
Cesium-137	3.7 million curies
Plutonium-239	75,000 curies

French Testing at Moruroa

French underground testing in the Pacific poses a different set of problems to other underground test sites since the sea is an integral part of the test site. At the time of the explosion, fracturing of the atoll surface can trigger landslides, tsunamis (tidal waves), and earthquakes. Possible long-term effects include leakage of fission products to the biosphere and transfer of dissolved plutonium-239 from the lagoon to the ocean and the food chain.

Physical Damage to the Reef

The upper layer of the atoll is made up of reef carbonates, mainly limestone. This limestone cover is approximately 300 meters thick in the south of the atoll, increasing to 430 to 550 meters in the north.

Each scientific mission to Moruroa has described severe damage to the integrity of the atoll. The damage includes fissures in the limestone and surface subsidences of large areas of the atoll. Fissures are propagated by the testing, a result of the cumulative compacting of the limestone. Fissuring serves to increase lateral and vertical water transport in the carbonate body of the atoll, possibly resulting in more rapid leakage of fission products. The French authorities claim that no new damage is occurring because the tests are no longer conducted under the reef crown but under the lagoon. This claim is contradicted by underwater observations of the Cousteau mission.

Triggering of Tsunamis, and Earthquakes

At least one major test-related landslide and consequent tsunami happened in Moruroa, on July 25, 1979. Apparently, the 120-kiloton weapon, which was supposed to be lowered into an 800-meter shaft, got stuck at a depth of 400 meters and could not be dislodged. The French authorities decided to explode the device anyway. This explosion resulted in a major underwater landslide of at least one million cubic meters of coral and rock and created a cavity, probably 140 meters in diameter. The underwater landslide produced a tidal wave comparable to a tsunami, which spread through the Tuamotu Archipelago and injured people on the southern part of Moruroa Atoll. French authorities initially denied that any mishap had occurred and declared that the tidal wave was of natural origin, but in a publication in 1985 they acknowledged "the accident of 25 July 1979."

Venting of Fission Products

Scientists of Australea, New Zealand, and Papua New Guinea in 1983 were authorized to carry out a single experiment in situ at Moruroa. Their measurements demonstrated tritium levels were 500 becquerels per liter while the expected concentration due to atmospheric fallout should have been in the range of 0.2 becquerels per liter. These high levels are probably due to venting. The Cousteau mission in 1987, measured radioactivity of plankton, which is an even better indicator of venting. In plankton, they found an iodine-131 concentration of 22.000 picocuries per kilogram.

Thus, two separate scientific missions, on which major restrictions were imposed, were still able.

independently of each other to find typical indicators of short-term venting.

Long-Term Leakage to the Biosphere

According to a model formulated by Hochstein and O'Sullivan (1985), an underground nuclear explosion in rock saturated with seawater can set up an artificial geothermal system. The heat stored in the explosion chamber is of the order of 10^{12} calories per kiloton of yield. In addition, heat generation due to radioactive decay goes on after the explosion of fission bombs, at a rate of about 595 calories per second per kiloton of yield. After an explosion, seawater enters the chamber and is heated up by about 25 to 50° Celsius by both stored and newly generated heat. The heated seawater dissolves the glassy materials, liberating the nuclear waste which transfers slowly upwards through the extended chimney. While the concentration of the radionuclides decreases by diffusion and absorption, the heated cell transferring the radionuclides moves upwards with a speed of about 10 meters per year, according to the computer simulations. Under the assumptions of this model, radionuclides from a depth of around 500 meters would reach the cracks of the lagoon in less than 50 years instead of the 500 to 1,000 years assumed by the French authorities.

The first hint that the model of Hochstein and O'Sullivan might be correct was the discovery of cesium-134 by the Cousteau Mission in 1987. In December 1990, Greenpeace too found cesium-134 in plankton collected outside the 12-mile exclusion zone around Moruroa. Recent studies indicate that leakage is occurring even faster than initially predicted.

The 120 underground tests conducted at Moruroa have in effect turned it into a long-term waste dump The total amount of plutonium-239 from these tests and the three at Fangataufa is about 18,450 curies Based on a rough estimate of 2.5 megatons total yield of underground tests, the amount of cesium-137 and strontium-90 dispersed would have been 400,000 curies and 250,000 curies respectively. About three-fourths of the cesium and strontium still remain underground and some may have found its way into the lagoons and ocean. As a repository for nuclear wastes from underground testing, Moruroa is less than ideal The geological structure is water-saturated, and there are natural fractures as well as a network of fissures due to the explosions. Moreover, the absorption capacity for the basalt of Moruroa as estimated by the French authorities is very low

"Safety Trial Causes Pollution"

The land area of Moruroa has been used to store radioactive waste (including scrap metal, wood, plastic bags, and clothing) in a huge heap on the north coast of the atoll, which covers 30,000 square meters. In addition, on July 21, 1966. a bomb broke apart on the surface of Moruroa, dispersing plutonium-239. This plutonium-239 was confined to the area by fixing il in place with a layer of bitumen. Moruroa was also used as a safety trial area (A "safety trial" is a test to check whether an atomic bomb will explode on impact with a hard surface—as in the event of a plane crash. In the case of a "safe" bomb, or a "successful" safety trial, the impact does not cause a nuclear detonation but breaks apart the bomb, scattering plutonium-239 about the site.) Cyclones hit Moruroa mainly in 1981, washing radioactive waste from the coral rim into the lagoon, including the plutonium -impregnated bitumen.

Due to these waste management practices, the sediment of the lagoon contains an estimated 20 kilograms of plutonium-239 At the time the Australian, New Zealand and Papua New Guinea Mission visited Moruroa, plutonium-239 concentrations in the air were about four times greater than in continental France The mission estimated that about 20 gigabecqucrels of plutonium-239 from the sediment of the lagoon arc transported annually to ocean waters. This is consist ent with findings of the Cousteau Mission that concentrations of plutonium-239 in the lagoon entrance are about ten times greater than in the lagoon itself They also stated that the observed concentrations in the sediment and in the water are much too high to be attributed to global atmospheric fallout and are therefore of local origin and due to redobilization from sedimentary deposits. There is evidence that plutonium-239 is accumulating in the food chain

Katherme Yih

Source Radioactive Heaven and Ear t h

Environmental Effects of Nuclear Weapons Production

Howard Hu, Arjun Makhijani

Roughly 70,000 nuclear war heads have been fabricated worldwide. This does not include reworking of materials and components of obsolete weapons into new ones. There arc many aspects of environmental contamination resulting from nuclear weapons production that we cannot estimate due to lack of data. But we can make some order of magnitude estimates of waste generation and environmental contamination from some of the principal processes.

- One hundred to two hundred million metric tons of uranium-mill tailings containing 100,000 curies (about 4,000 terabecquerels)each of radium-226 and thorium-230 from the estimated 400,000 metric tons of natural uranium used for military purposes;
- Over 400,000 metric tons of depleted uranium;
- About 3 billion curies (100 million terabecquerels) of high-level radioactive waste from plutonium production (including only strontium-90, caesium-137 and their daughter radionuclides yttrium-90 and barium-l 37). (This estimate is not corrected for radioactive decay; such a correction would reduce it by about one-half);
- Twenty million curies (about 700,000 terabecquerels) of krypton-85 (non-decay-corrected) into the atmosphere due to reprocessing;
- Thousands of square kilometres of highly contaminated land from production processes and accidents;
- Global contamination from fallout due to atmospheric nuclear weapons tests amounting to 30 million curies (one million terabecquerels) combined of strontium-90 and caesium-137 (decay-corrected), and 10 million curies (0.4 million terabecquerels) of carbon- 14 due to atmospheric testing. Additional inventories of fission products and unfissioned plutonium have been left underground due to underground testing.

Damage Far Worse

These summary estimates provide a starting point for the work ahead in making estimates of the contam i-nation in specific areas and countries. They are to be regarded as indicative rather than definitive. Moreover, they do not convey the real extent of the damage. Some of the worst damage has been in the former Soviet Union. Entire river systems have been contaminated in some cases, as for instance with the river system near the Chelyabinsk-65 plant. Lake Karachay at Chelyabinsk-65 is perhaps the most contaminated body of water on Earth. The dose rate near the pipe that discharges radioactive wastes into it is 6 grays per hour, which would yield a lethal (LDS0) dose in about 45 minutes.

Highly radioactive liquid wastes that result from reprocessing have been responsible for the worst accident resulting from nuclear weapons production. This was the explosion of a tank at Chelyabinsk-65 in September 1957. It resulted in the contamination of about 15,000 square kilometres of land and the evacuation of over 10,000 people. Dozens of tanks in the United States and elsewhere are at risk of explosions.

The Price Has Been Paid By Others

Uranium mining has been responsible for contamination not only in the nuclear weapons states but also in many other countries. Some of the most polluted areas form nuclear weapons production are in East Germany, which supplied the Soviet nuclear weapons programme, and in the Third World, which supplied the programmes of the United States, United Kingdom, and France. Even within the nuclear weapons states, uranium mining and resultant contamination have disproportionately affected tribal peoples.

The nuclear-weapons industry has contaminated groundwater, surface waters, seas, and oceans. For instance, the sea off Sellafield in England and the seas off Russia have been the dumping grounds for large amounts of radioactivity. In the United States and elsewhere, groundwater at many of the sites where weapons factories are located has become highly contaminated. While this water is not now being used for domestic consumption, it is not evident how its use can be regulated once institutional control of the sites is lost, or once they have been designated for other uses.

Decommissioning and cleaning up nuclear-weapons plants will produce additional large quantities of waste, the magnitude of which will become clear only over the next decade or so as decommissioning proceeds in the United States and possibly in other countries. Dismantlement of unwanted nuclear weapons and disposition of the fissile materials they contain present further formidable security and environmental challenges.

Exposed Populations

Broadly speaking, the making of nuclear weapons has exposed five groups of people to environmental and health dangers:

- 1. Workers at nuclear weapons facilities.
- 2. Armed forces personnel who participated in atmospheric weapons testing.
- 3. People living near nuclear weapons sites.
- 4. People who were subjects of experiments.

- 5. The world's inhabitants for centuries to come.

These categories include only those affected by the production and testing of nuclear weapons. The transportation, deployment, and possible use of nuclear weapons are not within the scope of this paper Generally, the most intensely exposed people have been workers in nuclear-weapons plants and testing facilities and members of the armed forces. Within these two populations, the extent of exposure varies according to the specific nature of their duties and length of service.

The third set of victims, often called "downwinders," are people who live near nuclear-weapons facilities. The definition of "near" extends in some cases to hundreds of kilometres downwind, especially in the case of atmospheric nuclear-weapons testing and large intentional or accidental releases, such as those that occurred at Chelyabinsk-65 or at Hanford in the United States. Some downwinders have been as highly exposed as workers and armed-forces personnel. This is certainly the case for some affected by the explosion at Chelyabinsk-65, for iodine-132 exposures from the first two decades of operation of the Hanford plant, and for nuclear testing downwinders among the people living near the Soviet test site near Semipalatinsk in Kazakhstan. Recent revelations in the United States have brought to light human experiments involving thousands of people. Finally, there have been and will continue to be exposures to the entire global population, mainly due to atmospheric nuclear-weapons testing but also to releases of krypton-85 and other gaseous radionuclides from plutonium production. Given the long lived nature of some of the radionuclides involved, these exposures will persist for thousands of years.

It is possible to make rough, order-of-magnitude estimates of the number of exposed armed forces and worker populations in some instances. The figure for exposed "downwinders" is considerably more fluid, mainly because of the interlinked problem of defining the boundary of the "downwind[1] area and uncertainties about doses offsite.

About 2,500.000 members of the US armed forces participated in the atmospheric nuclear-weapons-testing programme. The number or workers in the US nuclear weapons complex at any time has been to the order of 100,000 since the mid-to-late 1950s, excluding workers in uranium mining and milling. (Current employment during the decommissioning phase is actually higher.) Considering some turnover of workers and recent increases in employment for clean-up operations, several hundred thousand people have at one time or another worked in the US nuclear-weapons complex.

In the Soviet Union, the number of workers involved in the nuclear weapons complex has been reported to be to the order of 1 million, including people engaged in uranium mining and milling. No reliable estimate is available for armed forces personnel involved.

Large numbers of people were involved in uranium mining and milling in other countries Perhaps the largest number in a single place was the 450,000 uranium mine and mill workers in East Germany which supplied much of the uranium for the Soviet nuclear arsenal. Tens of thousands of people, at the very least, have been involved in uranium mining in China, including the period of particularly labour-intensive mining during the Great Deap Forward in the late 1950s and early 1960s

While we have not attempted to gather comprehensive data on the number of workers involved in this global industry, it would appear that at least two million people have been involved in various aspects of nuclear-weapons production and worldwide: the true figure is probably considerably higher

The levels of exposure to radiation of the four population groups vary widely Exposures due to global fallout are to the order of a few tens of microsicverts per year. However, the dispersed nature of fallout has resulted in exposure of billions of people to such levels of radiation.

Researchers have made various estimates of levels of exposures to downwinders. The most highly exposed groups that we know about are those living downwind and downriver of the Chelyabinsk-65 and downwind of Hanford in the early years of production The downwind exposures near Oak Ridge, Tennessee may also be high, but this remains the subject of study and controversy

The most highly exposed groups have tended to be workers. The most severe exposures of workers lor whom some data is available were in the Chelyabinsk-65 gas graphite reactor and reprocessing plant Worker doses in the early years averaged about I sievert. according to data published so far

However, under many circumstances, notably in facilities that processed uranium, internal exposures may have been high among certain groups of workers For instance, at the uranium-processing plant near Fernald, Ohio, data on employees indicate cumulative lung doses of several sieverts for some production workers. Yet neither the plant's corporate contractors nor the Department of Energy calculated internal doses from urine and lung-counting data that were collected at the plant.

Even greater uncertainties exist in regard to internal exposures for armed forces personnel, notably to alpha-emitting radionuclides. Thus, the overall exposures to workers, armed forces personnel, and downwind populations will remain the subject of considerable uncertainty and controversy, for some time Because most official data on these subjects in most coun-

tries are still secret, it is impossible to know whether reliable quantitative estimates can be produced at least for an appreciable fraction of the exposed population.

The Poor State of Data

Estimating the total toll on human health of nuclear-weapons production worldwide is almost impossible given the types of uncertainties discussed. Aside from the global fallout effects of nuclear weapons testing, estimated to produce hundreds of thousands of excess cancer fatalities over the centuries, uranium mining has been responsible for the largest collective exposures to workers. While precise global estimates are at present impossible, we note that one estimate puts the number of workers who have died of lung cancer and silicosis due to mining and milling in Last Germany alone at twenty thousand people.

Unfortunately, we cannot make similar estimates on a global level of the disease burden that may have resulted from occupational exposures in uranium mining, milling, and the industries related to plutonium reprocessing and nuclear-weapons manufacturing. It is instructive to note that many of the occupational mortality studies of uranium miners in the United States and Canada have estimated lung-cancer risks 2 to 6 times higher that expected. To the extent that this reflects generic risks shared by all uranium miners, and that working conditions have been siniilar or worse in other uranium-mining countries, this would mean that the mining of uranium for nuclear weapons has led to thousands of excess lung cancers. It is also apparent that a disproportionate share of that burden fell on indigenous or colonised peoples who lived in the areas of and were employed as workers.

In general, it is difficult to determine the validity of various studies in the face of serious problems with the quality and completeness of the data. For instance, in 1994, US officials admitted that even external dose data for workers have some serious deficiencies. In fact, portions of the data were entered into the radiation dosimetry records of workers when the badges were not turned in.

Russian data on health are clearly suspect, even for groups of workers and off-site populations living near Chelyabinsk-65 with high exposures. Health outcome data show far fewer than expected leukacmia or other cancer fatalities. This result is at considerable variance with well-established risk factors from medical radiation exposure studies and follow-up of Hiroshima-Nagasaki survivors. It is reported that doctors were forbidden to make radiation -related diagnoses, on pain of punishment. Thus, while some dose data indicate that one should find relatively high levels of fatal cancers, the health findings do not correspond to the dose estimates. New diagnoses such as "weakened vegetative syndrome" and even "ABC diseased unknown elsewhere, were created in Russia, possibly to fill the void for radiation-related diagnoses banned by nuclear authorities.

It is also impossible at present to estimate the disease burden due to community exposures to non radioactive chemical pollution emitted by industries associated with nuclear weapons. The data based is so inadequate that it does not permit even qualitative discussion of the health impact for individual countries, to say nothing of worldwide estimate. There are anecdotal reports of damage that are inconsistent with radiation damage. Such damages may be linked to chemical discharges. However, such emissions have not been monitored carefully, or indeed at all for most of the period for nuclear weapons production, so far as publicly available data indicate.

The Legal Question

World Court Judgement

On 8 July 1996 in The Hague, the International Court of Justice gave its Advisory Opinion on the question

"Is the threat or use of nuclear weapons under any circumstance permitted under international law?"

The Court highlighted:
"unique characteristics of nuclear weapons, and in particular their destructive capacity, their capacity to cause untold human suffering, and their ability to cause damage ta generations to come "

Thereby, the Court confirmed that nuclear weapons are in the same stigmatised category of weapons of mass destruction as chemical and biological weapons Indeed, the effects of nuclear weapons are more severe, widespread and long-lasting than those of chemical weapons of which the development, production, stockpiling and use are prohibited by specific convention regardless of size Also radiation effects are analogous to those of biological weapons, which are also outlawed by specific convention.

The Court could find no legal circumstance for the threat or use of nuclear weapons. Also it endorsed the view that threat and use are indivisible. The Court confirmed that, as part of humanitarian law, the Nuremberg Charter of 8 August 1945 - paradoxically signed two days after the nuclear strike on Hiroshima and the day before the one on Nagasaki -applies to nuclear weapons.

LETTERBOX

Continued from page 2

Right wing madness

The present madness is the.creation of the current right wing, nationalistic sentiments of the Vajpayee government and its tenuous position in the Indian parliament. My assessment, and suggestion, is that if the US and the other big bullies let this sink in a bit, while Pakistan explodes her own bomb (if I were in the white House, I would not do much to dissuade Pakistan from doing it), the tide would turn against Vajpayee on its own momentum as the arms race in the subcontinent builds up and the dissenting voices in India could be heard beyond the initial euphoria of the ignorant and chauvinists. India herself has to respond negatively to this madness, as I am sure ultimately it will. Economic sanctions help to delay that response.

Aqueil Ahmad

Old wine in new bottle

The tests, have been claimed to be a major scientific and technological achievement. We. scientists in various disciplines, while expressing our deep dismay and unhappiness at this action of the Indian Government, wish to point out that the magnitude of the S&T should not be blown out of proportion. The technology involved is for the most part decades old.

The country has been committed to an expensive weapons programme without a national debate.

We wish to recall emphatically, the horror that is nuclear war. There is a long tradition of eminent scientists who have consistently argued against the induction of nuclear weapons. The horrors of nuclear war cannot be forgotten, no matter what. How can we feel happy and secure in a world in which every country feels proud of its nuclear weapons capability and is convinced of the deterrence tactic ?

Signatures of more than 60 scientists from various Indian Institutes and Universities.

It's cheap patriotism

What with Anupam Kher speaking of 'our neighbours' molesting our sisters and daughters and someone from the external affairs ministry talking of it takes two to clap, but one to molest' I really shudder at the language and idiom of intolerance and cheap patriotism that is being unleashed under (his regime.

Dr. Rowena Robinson
IIT Bombay

Shot in the foot

Your letter started me thinking. 1 suppose the main impact on Indian science will be to encourage or prolong the life of the wrong kind of 'science', especially in physics. I am so disheartened about this already that I am not sure this additional shot in the foot will hurt much more.

I am saddened (hat we have gone so far in denying our Gandhian heritage, which is the only sure long term guide to the future of humanity as a society. This also seemed to be our main role in the 'comity' of nations.

Dr. T. V. Ramakrishnan
I.l.Sc. Bangalore

They have blown up our hopes and aspirations for peace in our generation The sadness is indescribable

Dr Zia Mian
Princeton University

Uncle Sam 's hipocrisy

Today we hear everyone in Washington asking for sanctions against India because of these tests Yet. it is well known that Israel has tested a nuclear device and currently has an inventory of at least 200 nuclear weapons and an IRBM delivery capability But no one will even mention that matter in the American news media Remember what happened during (he Carter administration Israel and the apartheid Afrikaner regime in South Africa tested a nuclear device near the Indian Ocean The Carter administration immediately orchestrated a flimsy cover-up. publicly claiming that it was a meteorite hitting the satellite, in order to avoid the triggering *o(* sanctions against Israel Of course, the news media in the United Slates dutifully accepted the cover-up and the matter disappeared down the Orwellian memory hole What we see now in Washington are crocodile tears being shed over the Indian tests. The United States has done absolutely nothing to stop Israel's rapidly escalating nuclear weapons programme despite more than enough leverage to do so. Some are more equal than others.

Start satyagraha against Nbomb

It appears that we have burned up a lot of electrons during the past several days. But talk is cheap Politicians value deeds, not words. Right now we need to be pouring tens of thousands of people into the streets of the United States, Britain, France. Russia. Canada. Europe. Japan, Australia, New Zealand. Israel. Pakistan, India and as many other countries of the world as possible, all demanding immediate nuclear disarmament. People Power. Politicians pay attention to that Back in the 1980s there were tens of thousands of people protesting all over the world against the Reagan administration's aggressive nuclear weapons policies We need that all over again, only tenfold. They must march, protest, demonstrate, blockade,etc. What Gandhi called Satyagraha, truth-force. Personally, I think this is the only meaningful response we have to what has just happened and to what could very well happen in the immediate future.

People of the world unite! We have only our nukes to lose!

Francis A. Boyle
Professor of International Law
University of Illinois
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Need for total disarmament

While Clinton chides India to sign the Comprehensive Test Ban Treaty. India's nuclear tests demonstrate the pointlessness of the treaty. Despite all of our movement's best efforts for more than a generation, we've been trumped by technology. India seeks laboratory testing capability as well, a goal the US would be comfortable with!

I believe any forward movement towards nuclear disarmament is waylaid by further advocacy and time spent on ratification of the CTBT. It is nuclear abolition or nothing, and as King observed, 'non-violence or non-existence." Arms control is not disarmament.

Can there be any doubt that it serves the interest of the US government and the military-industrial-prison complex to claim ignorance of imminent Indian nuclear explosions? Already conservative senators are exploiting this claim of ignorance to bolster their own perspective that the entire arms control regime is futile. Yes, the regime of arms control, the hope that incrementalism would lead to disarmament faster than technology outpaces the diplomats is indeed a futile hope. Arms control was never enough, and the CTBT now awaiting ratification should be abandoned and left behind by any nuclear abolition movement worthy of the name.

It is altogether fitting, then, that the last few months of tension among the purveyors of weapons of mass destruction have produced the proliferation of nuclear inspection and verification teams comprised of citizens whose allegiance is global, not national, but who are assuming the responsibility for the weapons in their own midst, deployed in their name.

The Citizen Verification Team at Los Alamos in March proclaimed that its goals are to " 1) educate the public about the United States' own weapons of mass destruction; 2) to call for international transparency regarding all programs which design, produce, or stockpile weapons of mass destruction; 3) to inspire a process of societal verification to bolster non-proliferation and disarmament efforts."

These seem far more worthy aims than another minute advocacy for the tool of proliferators, the Comprehensive Test Ban Treaty.

The Pakistani Foreign Minister said "it seems that the Indian leadership has gone berserk." He obviously knows the condition - Pakistan plans to follow suit. But the leader in this Fool's Parade is certainly the United States, under the banner of the CTBT.

Jack Cohen-Joppa
Nuclear Resister

I am sorry. Have the people been advised to take iodised salt, calcium and potassium supplements (to lower the uptake of radioactive iodine, caesium and strontium)? It would also help if they could use distilled water for at least the next three months for all drinking and cooking. It will help to leach out inorganic materials (which the body does not need). If perspiring use fruit juices, and no regular water just distilled water.

All underground nuclear tests leak some radioactivity to the environment. Several so close together in time and place must have leaked! I understand one was a hydrogen bomb - probably using the CAN DU reactor to provide the tritium!

2nd letter: While I do applaud the initiative of the anti-nuclear groups to condemn Canadian involvement with the nuclearization of India. I think we might use this outrageous event to forward a global disarmament strategy. We could back Pugwash is calling for a more active role of so called Middle Sized Countries, with Canada leading. We could seize upon and enlarge this initiative.

This Middle Sized Countries delegation could mediate between the five nuclear powers on the one side, and India/Pakistan on the other. Hopefully they could broker a swap between them providing for no more tests whether under ground or sub-critical, bona fide disarmament by the five nuclear powers, full signing by all parties of the nuclear non-proliferation treaty and right of inspection of all countries by the IAEA.

Rosalie Bertell

N-deterrence is dangerous

The Nuclear Weapons States (NWS) and NATO have stated repeatedly that N-weapons are essential for their security. Accepting those (incorrect) statements, an obvious conclusion is that the weapons are essential to Indian security, neighbour to a nuclear-armed China and with Pakistan claiming (and then denying) that it has nuclear weapons.

Nuclear deterrence is far too dangerous, because a single failure of deterrence between two heavily-armed nuclear states must result in destruction of both states, enormous radioactive contamination of whole continents, and probably the end of human civilization. As stated authoritatively by the Canberra Commission, "The proposition that nuclear weapons can be retained in perpetuity and never used - accidentally or by decision - defies credibility." My paper "20 Mishaps that might have started accidental war" shows how real the actual risk of inadvertent war was during the Cold War. A small risk continuing over a long period adds up to near certainty of disaster.

The nuclear arms race between U S A and USSR was the biggest mistake in human history. First, and by far the most important it risked destruction of human civilization and possible extinction of the human race. The risk is still present. Second, it was enormously expensive, taking resources away from many unmet human needs. Third, it has resulted in radioactive contamination which has rendered large areas of both countries uninhabitable for centuries, and has caused significant radioactive contamination worldwide.

There are good reasons for India and Pakistan not to repeat that mistake. If they do. the likely result is destruction of those two nations and severe damage to their immediate neighbours, by a limited nuclear war at some time in the future As to the expense, these countries are far less able to tolerate it than was the United States

India has not broken any undertaking of theirs nor any international law. They have not signed the NPT nor the CTBT. and have given logical reasons for not doing so. I believe the UN has no legal reason to apply sanctions. If the western NWS and their allies apply sanctions, the non- N WS will consider, perhaps correctly, that the purpose is to maintain the military superiority of the present NWS by punishing and threatening to punish other nations that try to acquire nuclear weapons

A possible consequence of a South Asian nuclear arms race is that a limited nuclear war there would so horrify the people of the world, by the destruction of an ancient civilization and its famous cities, and the terrible human suffering involved, that the NWS would be persuaded to give up their nuclear arsenals. We do not wish for it to happen that way, but we see it as a possibility.

A proper response by the NWS and their allies is to admittheir mistake, and to immediately renounce all dependence on nuclear weapons. They must then disable all the weapons promptly, and dismantle them permanently as soon as possible.

A lan F Phillips <aphi@web net>
Physicians for Global Survival

The Killing Advantage

Please note that the following refers only to direct deaths in the area of the blast, not distant deaths caused by fallout or other secondary causes.

Deaths produced by Pakistan attacks on India with 25-kitoton bombs striking highest population areas:

No of 25 kt bom bs	Deaths in Millions
15-32	19.2
182-379	46.8
1,630-3.395	128

Deaths produced by Indian attacks on Pakistan with 35 kt bombs in highest population areas

No, of 35 Kt warheads	Millions of deaths
76 1-163	13.5
253-542	22.4
811-1,739	46.1

Conclusion India's head is screwed on backwards, if it thinks for a second that It has derived any advantage via nuclear "deterrence " India's population densities are so great that only 15 to 32 Pakistani weapons can cause 19.2 million direct deaths in India. By contrast it would take fully 76.3 to 163 Indian nuclear weapons to cause roughly 13.5 million direct Pakistani deaths

India not only shot itself in the foot by choosing to go nuclear; it has revealed to the world its monumental incompetence in analysis. If does not take a wizard to count

Ike James <ike@swva.net>

Gandhi given second burial

On Buddha's birthday, the coalition government led by Bharatiya Janata Party put the finishing touch to more man three decades of erosion of Gandhi's legacy by conducting three nuclear tests With that show of military muscle. Prime Minister Vajpayee declared India to be a nuclear weapons state and staked its claim as a world power In so doing India has. for the time, thrown away a rarer and incomparably finer claim to great power status that it had already established in the minds and hearts of the people of the world India was already a great power for having given life during its independence movement to the philosophy of non-violent militant action The tests were, as some Indian commentators have remarked, the end of moralism as the basis of global politics for India, and the establishment of power politics

India's nuclear weapons programme has little internal strategic coherence India already possesses overwhelming conventional superiority with respect to Pakistan, which it has demonstrated in wartime India's programme allows China a cheap way to keep India oft balance by providing military assistance to Pakistan

India may aspire to match China in the size and variety of its arsenal (thought to be about 400 to 500 warheads), but it will have to expend enormous resources to do so. Most of the cost of nuclear weapons programmes is not for the weapons themselves, but for delivery systems, command and control, security, and related programmes dealing with deployment and potential use of weapons Moreover, since it does not have submarine-based long- or medium-range missiles, which are among the most expensive of systems, India's weapons will be relatively vulnerable to pre-emptive attack and destruction

Moreover, India simply cannot match the industrial and economic infrastructure of China, though they have comparable populations. For instance, India's installed electric power capacity is only about 80,000 mega watts, while China's is about 260,000 mega watts. China runs balance of payments surpluses, while India runs deficits. China has foreign exchange reserves many times those of India. It is relatively invulnerable to sanctions, since many large multinational corporations derive substantial portions of their profits from export-oriented manufacturing in China. To try to approach China's nuclear arsenal in size and sophistication would make India fall farther behind in industrial infrastructure, economic growth and consumer goods, even if the effect of sanctions is ignored.

Trying to create a substantial nuclear arsenal will complicate rather than promote solutions to India's two main border disputes with its neighbours: that with China in two sectors and that with Pakistan in Kashmir. By raising the level of tensions, it provides incentives to both Pakistan and China (which may act largely through Pakistan) to destabilize borders and force India to expend more resources in unproductive avenues.

If there is a silver lining to India's tests, it is to expose the hypocrisy of the nuclear weapons states and to create a sense of urgency among the world's people about the need for complete nuclear disarmament. The legacy of Gandhi can only be reclaimed by popular actions and demands upon recalcitrant powers that have grown too used to wielding weapons of terror and mass destruction.

Arjun Makhijani

Institute for Energy and Environmental Research, Takoma Park

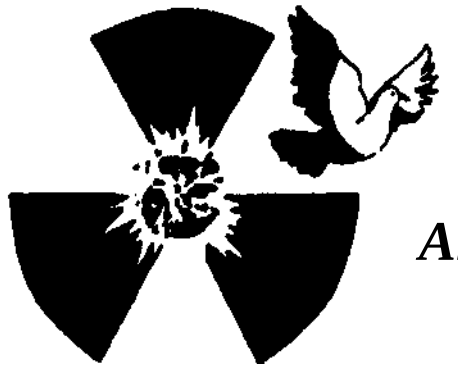
Living in constant fear

Earlier this month, I was in Kazakhstan, home of some 490 nuclear tests conducted by the Soviets over a 40-year period, until 1989. More than 19 million hectares of land were destroyed, and more than 75 percent of the inhabitants in the areas where the tests were conducted suffered radiation exposure. But these facts don't shock me so much as the words of the people I met in Semipalatinsk, one of the former nuclear test areas in the northeastern part of the country. Almost a decade after the end of testing in Kazakhstan, people still are surviving the consequences and living in fear of radiation. Radiation is a difficult topic to avoid — it is part of their daily existence.

In testing these nuclear devices, India and Pakistan can be added to the list of countries that have guaranteed fear for their populations and the people of neighboring countries. India and Pakistan may not be signatories of the Comprehensive Test Ban Treaty, but this testing is a violation of human rights and a violation of our earth. And whose choice was it? The people have no choice when governments decide to test nuclear weapons. And ultimately, our earth has no choice.

The United States and the global community must ensure the right to live free from nuclear testing, without exception. With every test that is conducted, we further disrupt the delicate ecosystem that sustains us. Testing is a road to ultimate self-destruction and one that none of us can afford to take.

Nicole Cheetham



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A RARE FLOWER: Dr. Kusuma Soraba

The diminutive five-foot frame, thin as a reed, did not reveal the dynamo within. But in a crisis her gift of fight came in full force. If there was one characteristic of her I would list at the top, it was this: she was not one to accept limitations either in herself or others. She would want to push everyone to try and move higher. Not that she was ever unkind or inconsiderate. She just wanted everyone to aim higher and put in their best effort

'Snehakunja' - 'friendly nest', was her dream. The rural hospital, near Honnavar, by the ocean, has a history of personal sacrifice and determination behind it. Kusumakka (as we called her) came from a conservative rural middle-class family. An aunt of hers was a nurse and that was an exception for women in the family. With difficulty, she persuaded the aunt to prevail upon the family to send her to Bombay to train as a nurse. Though Kusuma's dream was always to become a doctor, she could see no possibility of that, due to economic reasons. However, permission for a nurse training was a good starting point to breakaway from home and bindings.

She worked very hard. Always eager to team more, she hung around dissections and autopsy performances, together with the medicos, whenever she could. This aroused the cariosity of a senior faculty member who helped her to learn more. He even suggested that she could try and do M B B S instead. The suggestion sowed the seed of a desire which slowly grew into a resolve. Typical of her, once resolved, nothing could stand between her and the aim. After she trained as nurse, she enrolled for M B B S and worked as a private nurse to support herself and her studies. No nurse was ready to be on night duty at the morgue in the hospital. Kusuma went on a satyagraha and got that assignment to get the needed income.

Kusumakka always kept an open scientific mind. She once told me this story: 'In the hospital where she studied, a big donation had been given to set up a high-tech (top-class) burn care ward. The ward was special with high charges. The patients were not allowed to eat normal food from home and were administered some sterile regulated hospital nutrition only. Contact with the family was also minimum in the ward, to avoid possible infection. Kusuma found that recovery of burn victims was better in the ordinary ward where patients had more family contact and ate normal home food, even when their bums were of a worse degree. Patients with far less serious bums too healed slowly in the special ward. When she pointed out this to the doctor in-charge, he said, "perhaps you are right But keep that to yourself. The grant and the ward are important to the hospital."

The callous treatment of poor patients and the appalling hygiene affected Kusuma deeply. During one of her fights on behalf of the patients, she had no time to look after her own eye infection. Though she was aware of the danger, she ended up paying the price - and lost her eye. In her suffering came her next resolution - to set up a rural hospital where the poor arc treated with respect and affection. With grit, she did her masters in surgery, with the ideal of saving rural lives.

Though a surgeon, her inclination was always towards natural health care. The patients were made to do yoga and pranayama on the beach or the hospital roof in the cool breeze of the dawn. They got massage, steam bath, mud packs, undertook fast or were administered ayurvedic medications. Allopathic medicines and surgery were the last resort at Snehakunja. All the "five-star" treatment was given to the rural poor for a symbolic fee, as Gandhi had envisioned.

A true feminist

The hospital was only a part of her work. Snehakunja trained young women and men in nursing, social work and struggles, gardening and environment protection. Kusuma's commitment to the cause of the environment broke all barriers. Moved by the rural poor's plight in selling the soil from the paddy-lands to brick kilns

and the latter's destruction of the surrounding forests moved her to her first struggle against the series of brick kilns along the coast. She organised the people and educated them on the dangers of losing their natural resource base.

The environment movements had just begun in the State - against the various dams, the protest against Harihar Poly fibres denuding the forests, the Kaiga Atomic Power Plant... Everywhere, Kusumakka took her team of young women and men, writing and singing inspiring songs, shouting slogans, devising and acting street plays, she livened up all gatherings and rallies. Al the peak of the popular movement against the Kaiga nuclear power station, all the roads had been blocked and heavily policed to prevent the rally from reaching the site, undeterred by the gaping deep foundation pits, she jumped in and planted a peepul sapling. She had also asked the fishermen to reach the site by boats through the Kali river.

Sharavathy Valley was one she had saved many times, through dharnas and fasts. In a dramatic incident once she perched and sat on the drum containing the tenders called for clearing the forests for the Sharavathy Tail Race project. (This project had been stopped through a public interest litigation.) Once Kusumakka sat in a month long dharna together with teams of young women colleagues in the deep forest. Recalls one of those women, "...we were all women. In the middle of the forest, anything could have happened to us. It would have been easy for a bunch of rowdies to have intimidated and harmed us. But because of her name, none even dared to talk to us lightly."

Together with village women, Kusuma had started campaign against alcohol. Refusing bail, she spent six weeks in prison, spinning, writing songs and skits, involving and inspiring co-prisoners. Her time was demanded by not only the State level movements but also by national level movements. She kept pleading with friends to find doctors to look after her hospital work so she could be more free for total dedication to saving the environment. "Save Uttara Kannada District" (from the string of destructive projects) should be our campaign, she kept saying.

She was always too early a bird to be caught by the slow grinding wheels of the establishment: **When** the dome of the Kaiga atomic plant collapsed, she zipped across the 120 kilometres in the middle of the night, interviewed the workers and others and conducted her inquiry before the authorities woke up and closed off the place. One of the last concerns that tormented her much was the danger posed by

the big crack in the Kodsalli dam- one of the huge dams near Kaiga. She trekked all over, together with the shepherds who had first sighted the gaping crack, took photographs and alerted the district authorities and the public. She convinced the Karnataka Power Corporation.

A demanding role model

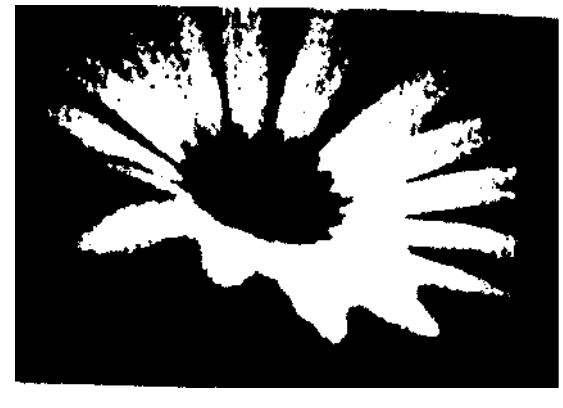
Kusumakka wanted her girls to be free, enterprising and fearless as herself. She wanted them to be always update and learn new things. Sometimes she would push them hard. Opportunities were offered to them to learn on hand. She loved animals dearly. Her cats and dogs ate with her. Her last acquisition had been a horse, she **wanted** to **be able** to go **to** remote villages, when needed, on horseback. She wanted **her** girls to **learn** horse-riding as well. She **had** declared once that three things were close to her heart, viz., nature, animals and mentally retarded children. She had done a **lot** for them all. The one-woman army had saved the Sharavathy Valley many times from the axe of the contractors.

The Valley, the forests will weep as will all the animals. The young women who might have been annoyed at having been pushed to do their best will slowly realise **that** a true friend and a role-model (if they wanted) is missing from their midst.

Kusumakka was not bound by others' rules - she made her own. Much to everyone's surprise, when she had passed 50, she adopted a baby boy. True to her expansive nature, she named him Bharath. She wrote and sang inspiring lullabies of universal love to little Bharath. Eight-year old Bharath's extraordinary mother is no more to lead him.

(For some lime now, I had been wanting to do a character sketch of Kusuma, to introduce her to a wider world. This writing had, in fact, been started when she was alive. But it seems fate had willed that the (lower (Kusuma means a flower) blush unseen by many. She was run-over and killed on the highway when she was returning from Bangalore on 14-3-98, after having consulted a lawyer to file a petition against the dam in the Sharavathy Valley. She was 61.)

K. Krpa



Rotblat: An exemplary man of the nuclear age

Jonathan Schell

In 1939 he initiated research on atomic weapons in Liverpool. England. In 1944 he came to the United States to work for the Manhattan Project. In December of that year—seven months before the weapon was first tested at Alamogordo and eight months before it was dropped on Hiroshima—he resigned his job. Rotblat had agreed to work on the bomb only because he feared that Hitler would win the war. He resigned when he learned that the German atomic bomb program had failed. When the peril that had justified his work on the bomb ended, he ended his work on the bomb. He was the only scientist working on the Manhattan Project to do so. His act provides lonely testimony to the capacity of human reason and will to overcome the powerful momentum of nuclear armament.

Today, the justification that Western nations gave themselves for possessing nuclear weapons—the Soviet threat—has ended and the question the entire West has to ask itself is the one Rotblat asked in 1944: When your reason for having nuclear weapons vanishes, do you end your work on them, or do you search for some new reason to go on? In the poem "Anthem for St. Cecilia's Day" W.H. Auden characterized modern man as the "impetuous child with the tremendous brain. "Rotblat, and Rotblat alone among the nuclear scientists in the months jus,! before the advent of the atomic age, gave proof that it was possible for people to act with restraint and take moral responsibility for the products of that tremendous brain. After the war, Rotblat went to work to rein in and eventually eliminate the weapon he had helped to create. He became, among other things, a cofounder of the Pugwash Conference on Science and World Affairs, an international organization of scientists that has worked since its inception in 1954 to reverse the nuclear arms race, and it was for this work that he won the Nobel Peace Prize.

Why work an the bomb?

"My rationale was that the only way to stop Hitler from using a bomb against us would be if we also had it and threatened to retaliate. In other words, it was the concept of nuclear deterrence. I may have been the first person to develop this concept." Rotblat laughed at the thought. These days he derides the idea that during the cold war, nuclear deterrence prevented wars. "How many more wars are needed to refute this argument?" he asked in his Nobel acceptance speech. He also rejects the claim that deterrence stabilized the relationship between the two superpowers. "Neither side," he said to me. "was ever sure that it could destroy the other side after suffering a first strike. That is why each side kept trying to make its own arsenal more powerful and the other side's more vulnerable until they built the unbelievable number of some 80,000 nuclear weapons."

"What do you make now of the reasoning that led you to work on the bomb?"

"I often ask myself how I would behave if the same situation recurred. And, yes, I feel that I might make the same decision, although in several respects I was mistaken. First. I didn't know that the Germans had given up work on the bomb a long time before I quit. Second, I didn't realize that so-called nuclear deterrence doesn't work with people who are irrational, as Hitler was. I now think that if he had had the bomb he would have used it. And, third, I was naive in believing that once we scientists had produced a weapon, the military and civilian leaders would listen to us regarding how it should be used "

Degradation of Moral Standards

I asked why he thought the other atomic scientists had not acted as he had done once Hitler lost the war.

"I believe that war has a terrible effect on our behavior, on our mora) standards," he answered. "One person who comes immediately to mind is Robert Oppenheimer. If you looked at his outlook on life, his philosophy, you wouldn't believe that such a man would advocate the use of the bomb on Hiroshima—on civil ians—and yet he did. He could have stopped, he could have said no, but he did not. and later on I found that his moral decay—in a way. his moral disintegration-had begun even before that, in 1943. You know that the first reactor came into being in December 1942 in Chicago. This was the first time it became possible to produce large amounts of strontium 90—the radio active fission product. He wanted to spray it on German soil, so as to poison the food and kill people. And there's a letter that he wrote in 1943 to (Enrico) Fermi, who was in charge of the reactor, saying that we should not begin the project unless we could produce enough (strontium 90) to kill half a million men. This was utterly barbaric It tells me that the war had affected him. It's one reason that I'm so much against war—not only because of the physical privation and suffering but also because of the mental breakdown."

No First Use

There are three areas in which Rotblat. who has written extensively on abolition (and edited a book. A Nuclear-Weapon-Free World, on the subject), has brought his altcntion to bear with particular insistence and force. The first is his advocacy of a nuclear no-first-use treaty—no-first-use being the policy that nuclear weapons should be dedicated solely to the mission of deterring other nuclear weapons. They should have no role in deterring conventional war, much less in actually repelling conventional attacks. If the pathways of escalation from conventional war to nuclear war were blocked, Rotblat has suggested, nuclear war would

become less likely, but he advocates no-first-use for another reason: its role in making nuclear abolition possible.

"The most important step at the present time—and this can be taken virtually overnight—is for the nuclear powers to declare that the only purpose of possessing nuclear weapons is to deter a nuclear attack," he said to me. "If the nuclear powers can agree on this, and follow it up with a global treaty of no-first-use, this in my opinion would be the breakthrough we need. It prepares the way to go to zero, for if each nuclear power possesses nuclear weapons only to deter other powers' nuclear weapons, and all were to agree to eliminate them, then no one would have any reason any longer to retain them. And it is something that can be done without an extraordinary verification system. I would put it at the top of my list of things to do."

Unfortunately, he observed, the nuclear powers cling, overtly or tacitly, to other justifications for keeping nuclear weapons. As the Nuclear Posture Review and the new Presidential Decision Directive made clear, the United States deploys nuclear weapons to deter a potential threat from some future hostile Russia and to deter chemical or biological attacks by "rogue" states. Rotblat joins General Horner in arguing that a nuclear-weaponless United States, which would remain "the most powerful nation in the world," has less to worry about and more to gain from abolition than any other country.

Societal Verification

Still. Rotblat calls for the most stringent verification systems technically possible for any future abolition agreement. Of particular importance, he said, would be verification of commercially produced plutonium, whose global stocks are already far greater than the amount of plutonium that might be removed from decommissioned nuclear weapons. He has concluded that verification within a range of 99 percent accuracy might be possible. Still, considering the amount of plutonium in the world, even 1 percent is "too much, because even 1 percent would be enough to make many bombs."

This admission brought him to the second area in the field of disarmament in which he has taken a particular interest "We should establish a system of societal verification," he said. "In societal verification, citizens—including, especially, scientists—acquire a legal obligation to report on any efforts to build weapons of mass destruction." Any global abolition treaty should itself create the obligation. "A clause of the treaty would mandate all signatory nations to pass national laws that make it the right and the duty of every citizen to notify international authority of any effort to circumvent the treaty. This would apply especially to scientists. To make nuclear weapons you need two things. One is special equipment and the other is a certain brainpower. If violations are occurring, scientists will realize that something is going on. With this societal system of verification in place in addition to all the technical means, the chances of any nation building up a nuclear arsenal in a completely clandestine way, without its being detected, is extremely small."

World Without War

In connection with his work on verification, Rotblat has subjected the various possible forms of "breakout" to analysis. The most likely violator, he has observed, would be a former nuclear power. Such a power, however, certainly would be highly unlikely to circumvent an abolition agreement merely to confront a conventional threat by a smaller power. That leaves "the possibility of a political situation that deteriorates so badly between two great military powers that they feel compelled to resort to military measures, even leading to the use of nuclear weapons." However, such a crisis probably "would be seen coming for a long time." Even if "both sides start to rebuild their nuclear armories," the outlook, however ominous, would be "better than at the present time," in which nuclear powers already possess large arsenals on a hair-trigger. The likelier case would be a small power that "clandestinely" built up "a nuclear armory for aggressive purposes" Such a country would likely face "the combined conventional military might of the whole world " Under such circumstances, "no rational leader is likely to take such a risk for gains that are bound to be short-lived." There is, of course, the danger that an "irrational leader" or "fundamentalist regime bent on launching a holy war" might build nuclear weapons. The special difficulty in such cases is that a military reprisal might "not be a deterrent." On the other hand, such cases are "unmanageable now." Rotblat concludes that while the dangers of breakout arc real, taken together they are far smaller than the dangers we now run daily in our nuclear-armed world.

Rotblat's conviction that scientists should take responsibility for the consequences of scientific inventions leads him to a third area of concentration. He believes that although nuclear abolition need not await general and complete disarmament, it nevertheless should be seen as a way station to a world without war. "Even now," he said, "many people still feel that we can fight a nuclear war and get away with it. They don't realize that for the first time in history man has acquired the means of destroying his own species in a single action. But even the elimination of nuclear weapons will not bring full security. Nuclear weapons cannot be disinvented. Therefore it is true that in a military confrontation nations will be tempted to rebuild them. Also, while nuclear weapons are the first means man has developed for destroying his own species, they will not be the last. Scientists can invent other means for the full destruction of the species. It is already recognized that further research is likely to bring these means into being. In such circumstances, any war can threaten us, because any war can escalate without limit These are my reasons for believing that the long-term objective must be not just nuclear disarmament but a world without war.

"Of course, people say that this is Utopian, much harder than the abolition of nuclear weapons. I argue that if you look at the actual trend in history in recent years.

Continued on page 7

Winning the Right to Oversee

To settle a lawsuit brought by 39 environmental and peace organizations, the US Department of Energy (DOE) signed a landmark agreement which would increase public oversight of its efforts to address severe contamination problems in the country's nuclear weapons complex.

The settlement ends nine years of litigation charging that the DOE failed to develop its "cleanup" plans properly. The DOE had faced a contempt of court hearing for not complying with a previous legal agreement in the case.

Key elements of the settlement include: —Creation of a regularly updated, publicly accessible database including details about contaminated facilities and waste generated or controlled by the DOE's cleanup, defense, science and nuclear energy programs, including domestic and foreign research reactor spent fuel, listing characteristics such as waste type, volume, and radioactivity, as well as transfer and disposition plans. —DOE funding for at least two national stakeholder forums to assure that the database is comprehensive, accurate and useful. —Completion of an environmental analysis, with public input, of plans for 'long-term stewardship" at contaminated DOE sites to ensure protection of the public and the environment —Establishment of a $6.25-million fund for non-profit groups and tribes to use in monitoring DOE environmental activities and conducting technical reviews of the agency's performance. —Payment of plaintiffs' legal fees and expenses incurred to litigate this case. —Continuing federal court oversight to assure adherence to the agreement

"I'm really excited! This is a major victory both for the environment and for public participation;" said Marylia Kelley, of Tri-Valley CAREs in Livermore, California, one of 39 plaintiff groups. "We have won access to the tools the public needs to

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The Race is Over

FREEMAN DYSON

A few years ago 1 walked into a room where there were forty-two hydrogen bombs lying around on the floor, not even chained down, each of them ten times as powerful as the bomb that destroyed Hiroshima. This experience was a sharp reminder of the precariousness of the human condition. It encouraged me to think hard about ways to improve the chances of survival of my grandchildren. Nuclear weapons remain, as George Kennan has said, the most serious danger to mankind and the most serious insult to God.

The disappearance of nuclear weapons from our thinking about the future is a historic change for which we must be profoundly grateful. Fifty years ago and for many years thereafter, nuclear weapons dominated the landscape of our fears. The nuclear arms race was the central ethical problem of our age. Discussion of the ethical dilemmas of scientists centred around bombs and long-range missiles. The evil face of science was personified by the nuclear bomb designer. Now, quietly and unexpectedly, the bombs have faded from our view. But they have not ceased to exist. The danger to humanity of huge stockpiles in the hands of unreliable people is as real as ever. Yet the bombs are not mentioned in our vision of the future. How could this have happened?

In the summer of 1995 I took part in a technical study of the future of the United States[9] nuclear stockpile. The study was done by a group of academic scientists together with a group of professional bomb designers from the weapons laboratories. The purpose of the study was to answer a question. Would it be technically feasible to maintain forever a stockpile of reliable nuclear weapons of existing designs without further nuclear tests? The study did not address the underlying political questions, whether reliable nuclear weapons would always be needed and whether further nuclear tests would always be undesirable. Bach of us had private opin ions about the political questions, but politics was not the business of our study We assumed as the ground rule for the study that the weapons in the permanent stock pile must be repaired and remanufactured without change in design as their components deteriorate and decay. We assumed that the new components would differ from the old ones when replacements were made, because the factories making the old components would no longer exist. We looked in detail at each type of weapon ami checked that ils functioning was sufficiently robust so that minor changes in the components would not cause it to fail. We concluded our study with a unanimous report, saying that a permanently reliable nuclear stockpile without nuclear testing is feasible. Unanimity was essential

Unanimity was made possible by the objectivity and the personal integrity of the four weapons designers who worked side by-side with us for seven weeks, John Kammerdiener and John Richter from Los Alamos, Seymour Sack from Livermore, and Robert Peurifoy from Sandia. They are impressive people, master craftsmen of a demanding technology. They have spent the best part of their lives planning and carrying out bomb tests. They remember every test, whether it succeeded or failed. They know why each test was done, and what was learned from its success or failure. Their presence was essential to our work, and their names on the report gave credibility to our conclusions. They are sur vivors of a vanishing culture. They lived through the heroic age of weapon-building. They will not and cannot be replaced By working on this study, they unselfishly helped our country to move safely into a world in which people with the special qualities and talents of these four men will no longer be needed.

The conclusion of our study was a historical landmark, commemorating the fact that the nuclear arms race is finally over. The nuclear arms race raged with full fury for only twenty years, the 1940s and 1950s. Then it petered out slowly for the next thirty years, in three stages. The science race petered out in the 1960s, after the development of highly efficient hydrogen bombs. Nuclear weapons then ceased to be a scientific challenge. The military race petered out in the 1970s, after the development of reliable and invulnerable missiles and submarines.

More Trouble Than They Are Worth

Nuclear weapons then ceased to give a military advanlage to their owners in real-world conflicts. The political race petered out in the 1980s, after it became clear to all concerned that huge nuclear weapons industries were environmentally and economically disastrous. The size of the nuclear stockpile then ceased to be a political status symbol. Arms control treaties were concluded at each stage, to ratify with legal solemnity the gradual petering out of the race. The atmospheric test ban of 1963 ratified the end of the science race, the ABM and SALT treaties of the 1970s ratified the end of the military race, and the START treaties of the 1980s ratified the end of the political race.

How may we extrapolate from this history into the world of the 1990s and beyond? The security and the military strength of the United States now depend primarily on non-nuclear forces. Nuclear weapons arc on balance a liability rather than an asset. The security of the United States will be enhanced if all deployments of nuclear weapons, including our own, are gradually reduced to zero. For the next fifty years we should attempt to drive the nuclear arms race in reverse gear, to persuade our allies and our enemies that nuclear weapons are more trouble than they are worth. The most effective moves in this direction are unilateral withdrawals of weapons. The move that signalled the historic shift of the arms race into reverse gear was the unilateral withdrawal of land-based

and sea-based tactical nuclear weapons by President Bush in 1991. Chairman Gorbachev responded quickly with similarly extensive withdrawals of Soviet weapons. The testing moratorium of 1992 was another effective move in the same direction.

To drive the nuclear arms race further in reverse gear, we need to pursue three long-range objectives: world-wide withdrawal and destruction of weapons, complete cessation of nuclear testing, and an open world in which nuclear activities of all countries are to some extent transparent. In pursuing these objectives, unilateral moves are usually more persuasive than treaties. Unilateral moves tend to create trust, whereas negotiation of treaties often tends to create suspicion.

Our nuclear stockpile study fitted well into the context of the reverse-gear arms race. The purpose of the study was to achieve a technical stabilisation of our stockpile, to clarify what needs to be done to maintain a limited variety of weapons indefinitely without testing. Stabilisation is the essential prerequisite for allowing the weapons to disappear gracefully. Once a stable regime of stockpile maintenance has been established, the weapons will attract less attention both nationally and internationally. They will acquire the qualities that a stable nuclear deterrent force should have: awesomeness, remoteness, silence. Gradually, as the decades of the twenty-first century roll by, these weapons will become less and less relevant to the problems of international order in a hungry and turbulent world. The time may come when nuclear weapons are perceived as useless relics of a vanished era, like the horses of an aristocratic cavalry regiment. maintained only for ceremonial purposes. When nuclear weapons are generally regarded as absurd and irrelevant, the time may have come when it will be possible to get rid of them.

Abolish War

The time when we can say goodbye to nuclear weapons is still far distant, too far to be clearly envisaged, perhaps a hundred years away. Until that time comes, we must live with our weapons as responsibly and as quietly as we can. That was the purpose of the stockpile study, to make sure that our weapons can be maintained with a maximum of professional competence and a minimum of fuss and excitement, until in the fullness of time they will no longer be considered necessary. In the meantime, the ethical dilemmas concerned with non-nuclear weapons and non-nuclear warfare remain unresolved.

The abolition of war is an ultimate goal, more remote than the abolition of nuclear weapons. The idea espoused early in the nuclear age by Oppenhcimer, that the existence of nuclear weapons might lead to the abolition of war, turned out to be an illusion. The abolition of war is a prime example of an ethical problem that science is powerless to deal with. The weapons of non-nuclear wan guns and tanks and ships and aeroplanes, are available on the open market to anybody with money to pay for them.

Science cannot cause these weapons
to disappear. The most useful contribution that science can make to the abolition of war has nothing to do with technology. The international community of scientists may help to abolish war by setting an example to the world of practical co-operation extending across barriers of nationality, language, and culture.

Freeman Dyson
From a talk delivered at Harvard College on March 6, 1997

■ Rotblat (continued from page 4)

you find that we are half-way there—or perhaps more than half. In my own lifetime I have lived through two work) wars and in both of these France and Germany were the principal antagonists, mortal enemies, and yet in the course of a few decades the idea of France and Germany going to war became inconceivable. In Latin America, only a few years ago, most governments were dictatorial military regimes. Now, except for one or two countries, they are democratic and no longer talk about fighting one another. The main enemy now is poverty, which we don't need a war to fight"

■ Winning... *(from page5)*

monitor the DOE's compliance with the nation's obligation to address the radioactive and toxic legacy of nuclear weapons production". "DOE is currently gearing up ils nuclear weapons research and development activities—the same kinds of activities that created this environmental disaster Now, for the first time, using the DOE's own data, we'll be able to demonstrate the link between cause and effect, a powerful argument against any further nuclear weapons design and production."

Many of the groups first sued the DOE in 1989, claiming that the agency must conduct a thorough analysis before moving ahead with plans to address the radioactive and toxic legacy of nuclear weapons production and modernize its facilities. The next year, the DOE signed a legal agreement promising a full public review of its proposals. In 1994, however, DOE leaders decided to abandon the Environmental Restoration Programmatic Environmental Impact Statement process without consent of the plaintiffs.

Source: Press release of plaintiffs. 14 December 1998

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Nuclear South Asia: 'Now I am become death'

A View From Bangladesh

Imtiaz Ahmed

With both India and Pakistan conducting a series of underground nuclear tests in May 1998, two of the South Asian countries joined an exclusive Club whose behind-the-veil motto was best summed up by Robert Oppenheimer, the father of US atomic bomb. On seeing the first atomic explosion at Alamogordo, New Mexico, on July 16, 1945, he said: "Now I am become death, the destroyer of worlds!" The question now is, will India and Pakistan's joining the exclusive Club change South Asia? The question deserves serious considerations not so much for reasons of military strategy or technology as for what it has done or is likely to do to the South Asians socially and psychologically.

Oppenheimer's statement, incidentally, *is* a direct quote from the Bhagavad Gita Until the first test at Pokharan in 1974, I, as a member of the South Asian community, took solace from the fact that Oppenheimer sought refuge in the wisdom of the East in highlighting the follies of the West. Little did I realize then that Oppcnhcime's spontaneous remark carried no weight on the people in the midst of whom the wisdom, or rather the cautionary note, had originally developed. But then, there was no reason why it ought to.

Bedeviled by Modernity

South Asians were bedeviled by modernity long before the modern West became nuclear. A precise kind of modernity, however, look roots in this pan of the world. Largely as a result of the colonial experience. South Asia by the beginning of the twentieth century became, what Nirad C. Chaudhuri sarcastically referred to as,'the provincial edition of the civilisation of Europe, palely reflecting like the moon, its borrowed light from the great sun beyond/ This was as true in politics and economics as it was in science and technology. Nuclear development, therefore, was a logical culmination of India and Pakistan's craze for developing their respective national states in the image of the modern West.

To put the current debate in a proper perspective, India's policy to go nuclear had little to do with China's nuclear development. In fact, India's nuclear programme is a pre-independence thing, with the Indian Board of Atomic Energy Research being established as early as 1946 under the able modernist, Bomi J. Bhabha Countries now point out that even the otherwise pacifist Nehru was so impressed by Bhabha's atomic quest that soon after in dependence he wrote to his Defence Minister Baldev Singh that not only did the futurc belong to those who produce(d) atomic energy,' but 'Defence (was) intimately con nected with this.' A modernist, and more so a dependent one, could hardly have thought differently. The first Pokharan test, for that matter, came in the wake of India's long, somewhat overdrawn, investment on nuclear R&D. In this sense, there is hardly any difference between the so-called secular Congress, under whose auspices the first test in 1974 look place, and the communal BJP, which gave the green signal for the tests in May 1998. Both chose to nuclearize India and fashion its development in the image of th modern West. Friends and foes of nuclear India, both within the country and beyond, were all mesmerized

There were good reasons for the BJP to make the event an expression of Hindutva and Indian nationalism. The two, indeed, became synonymous, and that again, almost officially, once the BJP was voted into power. In fact, policy-watchers in Delhi now point out that the BJP gave the green signal to Kalam and his team the day they won the confidence vote in the parliament. There is some merit in this observation, particularly in view of the heavily leaked secret that the tests were to be carried out before the CTBT deadline of September 1999, lest investment on nuclear R&D become difficult to carry through. Timewise, therefore, the BJP ought to be credited only for making the best of it. But then, why BJP and not Rao, Gowda or Gujral?

In the post-independence phase, the fervour of 'Indian nationalism,' particularly within the majority community, could develop and prosper only by way of advocating it as Hindutva- nothing more, nothing less. Not surprisingly, therefore, the minority communities in India are advocating not 'Indian nationalism' but other brands of nationalism or sub-nationalism, for instance, 'Assamese nationalism,' 'Muslim Kashmiri nationalism, 'Sikh nationalism,' 'Naga nationalism/ etc. For Rao, Gowda or Gujral, therefore, the nuclear tests could not have been made a part of 'national resurgence' or 'Indian renaissance/ lest these be taken as fuelling 'Indian nationalism,' whose other name is Hindutva within the majoritarian community. Devoid of the CTBT compulsion (that is, if we take September 1999 as the deadline), Rao, Gowda or Gujral could have gone for an early test, but this would have required desecularizing their respective parties/coalitions thoroughly. For all three, such a policy option was very difficult to undertake particularly when their entire life had been devoted to the enhancement of secularism or secular politics in India. The BJP had no such hangups.

A lot has been made of BJP's election manifesto and how they remained true to their long-advocated policy of making India a nuclear power. Less understood here is the fact that for a communal party like BJP this is all that matters. In so far as it is directed towards an alien power or nation, 'national resurgence' in the post-independence phase is less meaningful for the secularists but not necessarily for the communal forces. In fact, the respective position of the two on the issue of 'national resurgence' is quite the opposite during the colonial or pre-independence time. Knowing well that the nuclear tests would result in a national euphoria, which would only give credence to Hindutva and the power of BJP, the latter could ill afford to lose time, whether on grounds of coalition politics or still-to-come CTBT compulsion. Post-independence nationalism, given its inherently communalized and fragmented nature, quite justifiably came to rest on the deadliest machine on earth - nuclear power! In the process, however, the follies of the secularists were thoroughly exposed.

Immediately after the BJP-led nuclear test, Gujral, Gowda, Sonia, even influential Left politicians, all joined the post-test euphoria. In fact, Gujral and some members of the Congress went to the extent of claiming a share in the national pride. If there was any difference in their response it was restricted to congratulating the nuclear scientists and not the government or taking exception to BJP's position that India did it for China! In the public mind, however, their joining the euphoria simply amounted to congratulating Vajpayee and his 'courageous' government. Much of this, however, changed (and here lies the follies of the secularists) following Pakistan's nuclear test. A somewhat vibrant criticism of the BJP-led nuclearization of South Asia is now in full swing, but then BJP has already scored its points. Economic hardship and an out-and-out recklessness of the leadership can now only derail BJP's political gain.

Pakistan's response was predictable, although many in India, including some nuclear scientists, thought that Pakistan was bluffing. It did not take long for Indians to realize that no exceptional merit nor another Einstein is required to produce nuclear bombs. What is required is sheer drainage of resources and transferring/smuggling nuclear technology/materials. The hyped-up photo sessions of Kalam, Qadeer, and the like, were somewhat pathetic, almost paralleling the mythicized hero of a Bollywood/Hollywood sequence!

Again, to put the debate in a proper perspective, Pakistan's nuclear programme developed independent of India's, although it is Une that its tests were a direct response to India's tests. The 1974 Pokharan test did accelerate the process, but the nuclear programme in Pakistan had a much older history. In this context, the pro-Nuke community in Pakistan was probably put in a better position by way of having India as its enemy for it could easily impress upon many in the world to supply the much-required nuclear technology or at least tolerate Pakistan's nuclear programme. The hostile situation also allowed successive governments, both Pakistan and India's, to impress upon the people the need for spending a large amount of government money for nuclear development. Whether the bulk of the people of both India and Pakistan have become strong and more secured or poorer and insecure as a result of their respective nuclear tests remains an open question. Some other consequences, however, arc more predictable. For the sake of easy retention, I will enlist them under 4 S's.

1. Secrecy. Nuclear R&D have always been carried out under utmost secrecy. In practice, therefore, it remains incompatible with the openness required of a democracy. Any suggestion to the contrary is bound to kill either democracy or the state of nuclear secrecy. In fact, before the advent of high-tech x-ray machines, even nuclearscientists were required to stand wholly naked for inspection before entering their otherwise highly secured nuclear labs. Put differently, the first victims of a nuclear programme are not the enemies against whom it is carried out but rather the nuclear state's own people. One Pakistani critic, in the backdrop of the post-test Emergency declared by Sharif, commented: 'the state of emergency continues with all fundamental rights suspended. The

irony of the stale turning against the very people whose lives its securing through nuclear weapons is too much for me.' India's case is no different either. I will return to that shortly.

2. Smuggling. Post-nuclear India and Pakistan will experience Western/Japanese sanctions of one kind or another. There is no escape from it Such sanctions, however, must not be understood in the regular 'economic' sense of the term. While it is true that the transfer of high/super technology to India and Pakistan would be thoroughly discouraged/restricted for many years to come, the more routinized form of sanction will be the monitoring of South Asians, particularly scientists, entering or residing in developed countries. We already got a glimpse of that when an Indian American was made the scapegoat for the US intelligence failure(!) to detect the preparation leading to the Indian nuclear tests. Surprisingly, Pakistan carried out the tests when all the US satellites were telescoped to the test location, although none ventured to say that the US intelligence failed once again! Why invent an Indian American scapegoat in India's case, unless it is meant to question and sanction the professionalism of South Asians working in the US! But then, like sanctioning goods, sanctioning people for high-tech or nuclear technology know-how could lead to things not envisaged by the progenitors of sanctions. What I have in mind is the smuggling of technology know-how, more so in circumstances where there is a genuine demand yet there is restrictions. Put differently, nuclear development, given its horrific nature and pricy investment, reproduces a culture of smuggling, where nuclear bombs may not be smuggled but things connected to the development of nuclear bombs, including other more sophisticated conventional weaponries, are bound to be smuggled.

More at home, sanctions are bound to activate unregulated trade or smuggling across South Asian bottlers. Already critics are pointing out that both India and Pakistan are busy establishing "bogus trading bodies' in non-nuclear South Asian states to overcome Western/Japanese sanctions. Whatever may be the merit of this argument, given the porous nature of South Asian borders, it would be quite a task for the West/Japan to enforce sanctions against India and Pakistan. This must not be taken to mean that India and Pakistan will not be hurt by the sanctions already imposed nor non-nuclear South Asian states will desist from taking advantage of the situation by gearing up their own trades with both sanctioning and sanctioned powers. A sizeable section of this trade will, of course, be in the form of smuggling.

3. Small Arms. With the balance of nuclear terror in place, insurgent/sub-nationalist groups in South Asia will increasingly take recourse to small arms. A proliferation of the latter on a much grander scale is bound to happen. It would simply be a folly to think that suppressed individuals or dominated groups would give up their life-long struggles just because two South Asian states went nuclear! Without the option of a direct war now that both arc declared nuclear powers, there will be a temptation on the part of both India and Pakistan to help each other's dissenters by way of channelizing small arms through unregulated channels. As with the smuggling of goods, the illegal flow of small arms is bound to create ruptures within both nuclear and non-nuclear South Asian states. No nuclear bomb can stop the sub-national aspirations and the corresponding violence, whether of Kashmiris, Beluchis, Muhajirs, Assamese, Sikhs, and many others throughout South Asia. In this context, it is worth pointing out that the Soviet Union broke down at a moment when it had stockpiled thousands of nuclear bombs and that again, not just in kilotons but also in megatons!

4. Psychotic. There are various aspects to this. I will highlight only two. Firstly, a sense of paranoia takes hold of the nuclear state. We have already referred to Pakistan's post-test Emergency. In India's case, the paranoia seems to have taken roots without the support of an official decree. To give one example, at a post-test Afro-South Asian conference on 'national identity' at a city in Kerala (India), not only the entire batch of Pakistan delegates were refused visa but more interestingly. Home Ministry officials turned up at the venue and demanded not one but three copies of all papers to be presented at the conference! Even Indian delegates were thoroughly puzzled by the demand and quietly referred to it as a post-test syndrome.

Secondly, far from being awed by the 'scientific' achievement, most members come to nurture some kind of revengeful or killing mentality. This is particularly true with respect to children's response to the event. I found many Bangladeshi school goers, for instance, who busied themselves in pencil-drawing nuclear bombs for their own country! I also found adults talking about 'other kinds of bombs' or 'newer and more modernized military strategy' to counter the nuclear threat Indeed, so borriftc is the thing that the mind can hardly think anything beyond horror to rectify the thing. Nothing can be more dangerously pathetic.

The 4 S's are all pernicious not so much for informing and influencing the slate as for reshaping and reproducing the already polarized and violent civil society The further these make their way to the latter, the quicker we all will be living in the nightmarish world of Oppenheimer. The 'death,' for that matter, has entered our imagination and activities, indeed, in a more rotten way than the divine had originally planned. The only consolation at this stage is that with this stale of mind and living, the friends of nuclear weapons can go no further. On the other hand, the foes of nuclear weapons can now join hands not only within their own territory but also across national boundaries. Let us in the process of joining hands bury the nuclear-reproducing 'nation stale' and create a space for a post-nationalist state of living.

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The bomb and after

A Pakistani View

Tahira Mazhar

WAS it necessary to explode a bomb to satisfy ourselves as being equal to India? Were we in a position to use the same tactics as India? What has happened now? How has our dignity been enhanced by having to impose an emergency and having the rupee plunge and looking for a bail out?

We were told constantly by our foreign minister, our information minister and our finance minister that if sanctions were imposed on us, we were prepared for them and these would not have any serious effect on us. The prime minister very confidently told Pakistanis in Manchester: "Pakistan is not afraid of any economic sanctions. These sanctions are a blessing in disguise as these will help the nation to stand on its own feet and become self-reliant."

Why are we now talking of dwindling foreign exchange reserves and seeking IMF aid? Every week the State Bank issues new orders and those who brought back their foreign currency to put it in their own banks because they trusted the Nawaz Sharif government arc now holding him responsible for the mess. This is one aspect of the present scenario.

Mr Nawaz Sharif during his election campaign had promised easier trade with India and cooperation in other fields. But today he seems helpless and like others talks of nothing but Kashmir. Of course the Kashmir issue should be solved, but it must be solved with the cooperation of the Kashmiri people. Many of them, it is said, want an independent Kashmir. Are we prepared for that? We must not become a hostage to the Kashmir issue, and go ahead with other problems facing the two countries. This is what Mr Nawaz Sharif talked about during his election days. I think Mr Sharif is also a hostage to a coterie of people who are against any negotiations with India. He must pick up courage and face them so that both our countries can move further towards progress and peace.

It is high time we recognised our own nation. We are not a nation which can make sacrifices. We do talk and our Press talks even bigger but when the time comes, there are not many who are prepared to do anything concrete. So let us not depend too much on the people. Of course they can be forced to sacrifice, but is it really sacrifice for the sake of safeguarding the country or to protect the power politics of the ruling coterie?

Tahira Mazhar
DAWN Group of Newspapers, 1998

Andhra Pradesh Police tries to gag popular expression against nuclearization

The first casuality of nuclear weapons is concience. The second is democracy.

Andhra Pradesh based Organisation for People's Democratic Rights (OPDR) had invited me to speak at a meeting in Hyderabad held on 9th of August to commemorate Nagasaki Day. This well attended public meeting was held in a centrally located large hall called Ambedkar Bhavan. The meeting was followed by a rally which passed off peacefully without any instance of violence or any disturbance whatsoever.

For the meeting the organisation had published a pamphlet in Telungu and a programme notice in English. This material was pasted in public places like bus stops, walls of public offices, etc.

The Saifabad unit of the Hyderabad city police found these notices an intolerable disfigurement of the beautiful city of Hyderabad and have launched a case against Mr V Narayan Reddy who is an advocate and organising secretary of Hyderabad unit of OPDR. The case (Crime No. 376/98) has been registered under section 3 of Andhra Pradesh Prevention of Disfigurement of Open Places and Prohibition of Obscene and Objectionable Posters and Advertisment Act.

If the police were as zealous and determined in launching prosecutions against all pasting of posters and notices that disfigure the beauty of Hyderabad it would indeed be commendable. However, one finds the place crawling with posters of film advertisments and notices of various 'acceptable' political parties. Perhaps the police find that these posters enhance the beauty of Hyderabad.

Selective application of laws especially against political opponents leads to the suspicion that the prosecution is not meant to preserve the beauty of Hyderabad's official buildings but is an attempt to suppress expression of views contrary to government thinking. When these views are being expressed against so obscene and objectionable activity as the nuclearisation of India, it is indeed a travesty of the fundamental right of freedom of expression enshrined in the Indian constitution.

The High Court of Andhra Pradesh has already granted Mr Narayan Reddy a stay in the proceedings against him. However, letters to the cyber-savvy Chief Minister Mr Chandra Babu Naidu protesting against this might well be in order.

Surendra Gadekar

Anti-Tests' Protests on Hiroshima Day

Hiroshima and Nagasaki day commemortations, have normaly been somewhat of a ritual Usually there is a politician or a bureaucrat lecturing bored school children about the borrors of atomic war and shedding metaplnri-
col tears in rememberance. Not this year The tests at Pokharan and in the Chagai hills ensured that all such crocodiles remained indoors while the message of Hiroshina was brought close to home. There were some large demonstrations in the metros, but more relevant were the demonstrations and awareness raising programmes in small towns and even in some villages At
nuclear India. Below we have given a brief description of some of these protests.

Calcutta

In one of the biggest anti-nuclear demon stration held anywhere in the world, over 400,000 people marched along the streets of Calcutta to register the impassioned protest of the masses against the policy of nuclear weaponisation. The march which lasted for more than three hours was convened at the call of 66 mass organisations.

The procession was interspersed with a variety of tableaux which depicted the terrible fall-out of nuclear explosions. Some portrayed the horrors that continue to haunt the world in the wake of the nuclear attacks by the US in 1945 on Hiroshima and Nagasaki. Various organisations presented models of the kind of all-pervasive pollution that affects humanity even when comparatively 'smaller' nuclear devices are exploded, whether above the ground, below the ground, or under water.

The procession also included bands of tribal people from most of the twelve districts of south Bengal from where massive processions came to Calcutta from very early in the morning of 6th August In their own, unique manner, the tribal song-and-dance ensembles voiced their protest against all kinds nuclear 'experiments' that would ultimately harm the green earth and the people who inhabit it The variety of the performances and the colourful costumes and masks that they wore attracted a lot of attention.

The procession that started from the Netaji Indoor stadium and from several other points of the city, traversed central Calcutta, criss-crossing the main thoroughfares many times before ending in a huge-rally at the Park Circus maidan. Songs, dances, mimed-plays, street-theatre, recitations, on-the-spot paintings marked the progress of the marchers. Just before the beginning of the march, a convention was held in the packed-to-capacity Netaji Indoor stadium. The convention was addressed, among others, by the writer Sunil Gangopadhyay, the poet Sankho Ghosh, the film director Mrinal Sen and others.

New Delhi

Shouting slogans and carrying placards proclaiming We Want Bread Not Bombs, No More Pokhrans, No More Hiroshima-Nagasakis and No Weaponisation, No Deployment thousands of people including a large contingent of school children wound their way from behind the Red Fort through the main streets of Old Delhi in an impressive Citizens March Against Nuclear Weapons.

The march culminated at the Feroze Shah Kotla grounds where a resolution was read out in Hindi and English by veteran Gandhian Nirmala Deshpande and historian Romila Thapar. Prominent personalities from different walks of life participated in the march including writer Arundhati Roy, social scientist Rajni Kothari. journalist Kuldip Nayyar actor Raj Babbar. Artists, acaedemics, writers, college and school students, workers, and activists of mass organisations came out in full force to lend their voice against the nuclear madness that threatens to envelop the subcontinent.

The resolution adopted at the rally noted that the tests carried out in May 1998 and the consequent provocative rhetoric "have only heightened tensions in the region, worsened relations with our neighhours and undermined popular initiatives aimed at forging peace among the people of the region" It said. "Both India and Pakistan now have the capability to perpetrate the horrors of Hiroshima and Nagasaki on each other, not once but many times. Therefore, the need to remember August 6 Hiroshima Day is particularly important. The people of India and Pakistan must stop this madness which threatens us with mutual annihilation.*[9]

The resolution also asserted that India must continue to vigorously campaign to dismantle the global discriminatory nuclear regime and initiate moves towards global nuclear disarmament. The nuclear weapons powers, despite all their pious pronouncements about dismantling their arse nals, have made only marginal efforts to do so. Pointing out that their imposition of sanctions against India and Pakistan is hypocritical, the resolution said if they are

serious about non-proliferation, they must pursue a credible programme for destruction of nuclear weapons globally, starting with their own. It added, "In order to resume India's due role, India must return to the global nuclear disarmament agenda and stop any further measures towards induction and deployment of nuclear weapons. Pakistan too must reciprocate with matching measures."

Chennai

A Committee Against Nuclear Weapons, called for a massive Human Chain starting from Parry's Corner - a key gathering point near the city's central bus terminus - to the Central Railway station, a distance of nearly three kilometres, on the evening of August 6, 1998.

The popular response surpassed the most optimistic expectations of the organisers. From 5 to 6pm in the evening on August 6 more than 5000 people lined up along the entire route from Parry's Corner to Central station. The composition of the crowd was as interesting as its size was impressive. There were at least two to three hundred children, a sizeable contingent of women and a not insignificant number of senior citizens.

Mumbai

More than 2000 demonstrators took part in a Silent Procession from Azad Maidan to Hutatma Chowk. The programme was organised by a "'Citizens Committee for Commemoration of Hiroshima and Nagasaki". More than 50 orgnisations including the Left parties, trade unions, Gandhians, progressive women's organisations, artists, intellectuals, environmentalists, civil liberties organisations, students and youth organisations and many voluntary organisations had constituted this Committee.

In addition to this Peace March, many local programes were held in different parts of Mumbai. Public meetings organised by Bombay Sarvodaya Mandai and lectures in colleges, along with showing of educational films like "Prophecy" are also taking place involving several thousands of students and members of the public.

Thousands of people in the state capital Agartala and in the North Tripura headquarter, Kailashar marched the streets on August 6 afternoon to assert the predominance of peace and amity over the forces of fissiparousness and warmongering on earth, marking the occasion of Hiroshima Day in Tripura. The main procession originating from Umakanta Maidan was preceded by a brief function consisting of revolutionary songs and invocatory addresses.

Lucknow

A meeting was held at the Ganga Prasad Memorial Hall in Lucknow which was presided over by K.N. Kakkar, well known literary personality. The meeting was addressed by Medha Patkar, and Professor A.P. Shukla..CPI(M) polit bureau member Sitaram Yechury and socialist leader Raghu Thakur also spoke.

Thiruvananthapuram

In Thiruvananthapuram, the capital of Kerala state, a three hour long programme from 10.30 am was held at the Martyrs Memorial at Palayam attended by thousands of people. The programme included songs, skits, speeches and exhibitions against nuclear weapons. The programme was organised by the A.K. Gopalan Study Research Centre. Posters, placards and banners condemning the use of nuclear weapons were put up all over the city. The programme began with a speech by Jubha Ramakrishna Pillai, the oldest surviving freedom fighter in Kerala. Students of the Model High School held up a huge banner with the words "We Share the Sorrow of Hiroshima". Well known historian K.N. Panniker released a poster with the words in Malayalam meaning —"Resist the Bomb — Or There Will be No Tomorrow:"

Almora

Five non-governmental organisations together orgainised a march in Almora town and gave a memorandum to the district collector. There has also been a continuous programme of education on the subject in schools and colleges in the area.

Udaipur

A number of different organisations of Udaipur area including Seva Mandir, Rajasthan unit of People Union of Civil Liberties amongst them had together sponsored antinuclear events which included a large rally and many meetings. Dr Sanghamitra from the Anumukti team had come as one of the invitees. These events were well covered in the local press. In her speech, Sanghamitra stressed the close relationship between nuclear weapons and the nuclear energy programme saying one was the mother of the other. Ex foreign secretary Jagat Mehta in his speech said that real security is only possible by removing poverty, ignorance and disease and not through engaging in an arms race.

Itarsi

The Kisan Adivasi Sangathan of Kesla had organised a silent procession in Itarsi and also issued a factsheet on nuclear issues in Hindi to commemorate Hiroshima day. The fact sheet which is in a question and answer format tries to counter many of the commonly encountered propaganda and misinformation on the nuclear issue.

Other Events

There were many other places where there were similar events and demonstrations. In our neighbourhood itself at Valod there was a rally with about a thousand participants. One thing that we at Anumukti did was to bring out a Hindi edition of Anumukti This has been well received and we intend to continue to bring out more material in various languages so that information about this issue no longer remains the preserve of a few who are literate in English.

IS ACCDDENTALNUCLEAR WAR IMPOSSIBLE?

Dr. Pervez Hoodbhoy

By the decree of Pakistan's Foreign Minister, accidental nuclear war between Pakistan and India cannot occur. In a statement to the APP on November 29, Mr. Sartaj Aziz said emphatically "I see no possibility of an accidental nuclear war between Pakistan and India. Pakistan has an effective command and control system".

This categorical statement is shockingly unscientific because it presumes complete fore-knowledge of all future crises and exigencies, a complete understanding of all the possible mechanisms that could lead to a nuclear exchange, and complete confidence in India's command and control system as well as that of Pakistan's. Further, it asserts that human error misjudgement, and miscalculation are impossible. Unfortunately, not a single assertion or presumption is logically or scientifically sustainable. On the contrary, there have been numerous tragic incidents in India and Pakistan that prove accidents and miscalculations are far from rare. At best the Minister could have argued that the probability of accidental nuclear war is small. Even though this assertion too would have invoked many questionable assumptions, nevertheless it could have been defended with some degree of plausibility. As it stands, however, the statement is factually and scientifically wrong.

It is not my intent to split hairs on an abstract academic discussion of the improbable versus impossible. The issue is far too serious for that.

One need merely note that nuclear war by accident was never derided and dismissed during the years of US-Soviet nuclear confrontation. On the contrary, both sides took this possibility very very seriously. To avert a false move during those five long decades, the two giants spent trillions of dollars acquiring the most sophisticated forms of intelligence gathering by satellites, aircraft, ships, and submarines. The data from these were continuously analysed using computers equipped with artificial intelligence programs. This enabled both sides to know each other's level of readiness for combat, and know in advance preparations for a nuclear strike. Without such an elaborate command and control system a doomsday nuclear confrontation may well have occurred out of fear or suspicion.

Of course we know that a US-Soviet nuclear war did not occur, but the danger had never been far away. In spite of every possible precaution — and technology far more advanced than India or Pakistan can even dream of — false information provided by radar and other detection systems was a nightmare for the US and Russian militaries. There were several serious false alarms causing much alarm, and this is true to an extent even today. For example, it has recently become known that on 25 Jan 1995 the Russians mistook a Norwegian scientific rocket for Trident sea-launched warheads. This mistake lasted for a full eight minutes - only two minutes away from the launch of Russian nuclear missiles, which are ' launch-on- warning'. Today there exist fears that although a nuclear launch is meant to be authorised by the Russian President, the Defence Minister and the Chief of General Staff of the Armed Forces, and subsequently by three officers at *the* missile sites, nevertheless this chain of command can be bypassed. Russian officers have been known to re-wire their systems to circumvent this and some may have the ability to launch autonomously. It has also been reported that sometimes only one officer remains on duty with the two keys and the button at his disposal.

There are lessons here for all who care to learn from the experience of others First, even the best technology is not good enough when the issue is whether or not to use nuclear weapons. Second, human intervention — either through mal-intent, ideological fervour, inexperience, or plain stupidity — can render the best plans and technology impotent. The Pakistan-India nuclear confrontation brings a special urgency to both sets of issues

It is common to assert that since the US and Russia, each with tens of thousands of weapons, were able to survive the Cold War therefore there is no reason for Pakistan and India, which have far fewer weapons. to feel alarmed. This is wrong reasoning. What may have been considered good enough for preventing accidental US-Soviet war is simply not good enough for us Having a common border, and with subcontinental missile trajectories of only 4-8 minutes, any type of early warning system is useless. Even if the best satellites, cameras, and computers in the world were miraculously made available to Pakistan and India, this would achieve nothing. In this ridiculously short lime it is totally impossible to make a rational decision as to whether the alarm is genuine, and whether the incoming missiles are to be presumed as nuclear armed.

Because no early warning system against nuclear-armed aircraft or missiles is possible, and because there is no way for Pakistan or India to protect their respective command and control centres, there is one and only one possible course of action. This is to disperse and deploy nuclear-armed aircraft and (when available) missiles over as wide a geographical area as possible under the command of separate military units. Further each unit must necessarily

be provided the necessary authorisation codes for arming and launching the nuclear weapons in its possession.

Without providing autonomy to nuclear-armed military units, dispersal makes no sense — a single bomb on the Rawalpindi GHQ would knock out Pakistan's ability to mount a retaliatory strike. Even if the GHQ, or some other command and control centre, were somehow fortified to survive a nuclear blast in the vitinity, the electromagnetic pulse which accompanies a nuclear blast would destroy all normal telecommunications.

Hence autonomy of military units is an inescapable requirement for maintaining a credible deterrent. But, at the same time, this has a frightening cost because each unit, and not the PM and COAS, would have the final say in launching a nuclear strike against India. Could some ideologically charged Hindu-hating unit commander take destiny into his own hands? Could deliberately falsified or "honestly wrong" information reach a unit and result in ils launching the weapons in its possession? No one really knows, but the chances are certainly not zero.

One could make a virtually identical argument about India. While it is true that India is much larger, and Pakistan has fewer nuclear weapons, the difficulty in setting up an Indian command and control system that will not fail is almost equally severe. It would be stupid to concentrate-all nuclear decision-making in Delhi, and hence dispersal of nuclear forces is equally important for India. But the problems of dispersal are equally severe as well, and the possibility of accidentally initiating nuclear war from that end exists to a similar degree. We have no right to presume that the Indian command and control system is any more reliable than ours is.

Are these fictional, exaggerated, fears? I wish it were so. But the truth is that accidents, sabotage, and tragedy have frequently haunted our two countries. India has seen the terrible Bhopal gas tragedy. numerous nuclear reactor mishaps, dam collapses, and industrial accidents. Pakistan has seen many tragedies too.

It was but ten years ago that an unending stream of shells and rockets rained down from the skies of Rawalpindi and Islamabad, killing about a thousand people and wounding and maiming many times that number. The immediate reaction of most people around me, with whom I watched this awesome display from my university 10 miles away, was that it was an Indian attack. Others said that Kahuta had exploded. The government behaved like a chicken with its head cut off and went around in circles. It was much later in the day that Radio Pakistan admitted that an ammunition dump, located in the heart of the city, had blown up. To this day, no official report of the Ojhri Camp disaster has been made public and the cause remains secret.

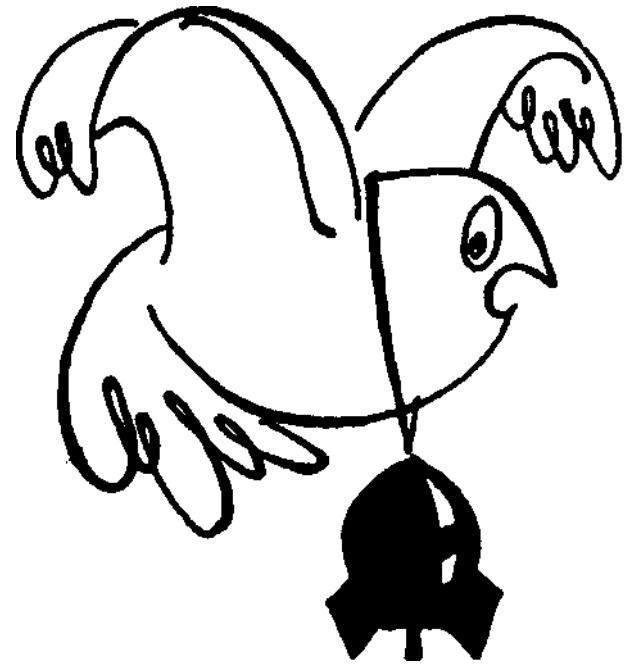
The explosion of a nuclear device would be immeasurably more serious than the blowing up of an ordinary ammunition dump. Indeed, thirty years after Hiroshima US nuclear weapon designers became conscious of the fact that in the event of fire or ordinary explosion, there is a fair chance that a nuclear weapon could undergo nuclear detonation even if it had not been readied for use. This could happen, for example, if a bomber or missile were to crash upon one's own territory. Subsequently there was a massive effort to make nuclear weapons safer, as well construct the exceedingly elaborate electronic and mechanical safety catches called Permissive Action Links (PALs).

One does not know whether Indian and Pakistani nuclear weapon makers have put in the enormous effort needed to "safe" their weapons and to what extent they have succeeded or failed. But, generally speaking, our national disposition is that of risk takers. The notion of fate plays an important role in our poetry, language, and daily behaviour. Therefore, for both India and Pakistan, safety has never been an over-riding concern in driving cars and buses, disposition of toxic wastes, construction of buildings, and so forth. Why should we assume that it would be any different when it comes to building bombs?

A nuclear Ojhri is not, therefore, impossible. When Indian or Pakistani nuclear weapon are assembled and deployed to operational units, the danger will rise in direct proportion to their numbers. If a nuclear explosion occurs for whatever reason, the natural assumption would be that the device belonged to the other side. Even if the device actually belonged to one's own side, a government, fearful of public reaction, may commit the ultimate folly of attempting a cover-up. The consequences of this could be various, including the probable initiation of cross-border nuclear hostilities.

No one knows how probable accidental Pakistan-India nuclear war is, no one knows what surprises Kashmir holds, and no mathematical equation can provide the answer we want. But let us recall General Zia-ul-Haq's famous remark, made soon after the crisis precipitated by India's Brasstacks exercises along the Pakistani border in 1986, "neither India nor Pakistan wanted to go to war but we could have easily gone to war." Therefore, to create a false sense of security in the post-nuclear age is an act of supreme folly.

(Dr Parvez Hoodbhoy is professor of physics at Quaid-e-Azam University. Islamabad}



The Rip Van Winkles at IAEA begin to wake up

At a recent conference, International Atomic Energy Agency's radiation safety director Abel Gonzalez said that the world must attack the growing hazard posed by lost, stolen, damaged, and misused radiation sources. "In half the member countries of the IAEA, there is virtually no systematic management of sources," Gonzalez said. "And in about 50 more countries which are not IAEA members, the situation is even worse."

The International Committee for Radiological Protection (ICRP), Gonzalez said, has issued 70 publications but only two on sources, and none concerned with the security of materials. ICRP guidelines, he said, are "simplistic," calling for the prevention of radiation releases from sources but offering no technical guidelines. The ICRP guidelines "are only motherhood-and-apple-pie statements," he summarized.

Observers at the conference said they expected a major IAEA redirection of efforts in less-developed countries by the Division of Technical Cooperation, where the IAEA has been pushing for nuclear development in industrial programs relying heavily on use of sources, toward safer practices in using radiation sources. One IAEA official said, "From now on, if the IAEA doesn't see a solid infrastructure in a country for making sure the sources arc used properly and kept track of, it won't be able to justify" programs in that country on food irradiation, medicine, and other ventures.

The Department of Atomic Energy, whose responsibility it is to ensure the safe handling of radioactive material, is not worried. But that is no surprise. Nothing worries them. They claim that India has a very fine record of safety regarding transport of radioactive materia). All reports one keeps hearing of regarding missing radioactive pencils, radioactive sources in the Cooum river and so on are just mere accidents. DAE is notorious for its secretive ways. Missing radioactive sources, unless they lead to some major tragedy are likely to be just filed and forgotten. Some years ago in Anumuku we had carried a bizarre story of a missing Techops camera with an iridium-192 source which had got misplaced in the Indian railways.

Not the only one

At the international meeting in Dijon. France, middle of September, it was apparent that India is not the only country where radioactive sources go missing in trains. Some so-called advanced countries are even more advanced in following hazardous practices.

In the U.S., nearly 200.000 people and institutions have been licensed to use radiation sources and the total number of sources in their hands is about 2 million. "We have no national inventory and we are not in touch with the licensees of these sources," said one U.S. official in Dijon. The result of bad management and neglect, Gonzalez said, is a "long and worrying scries of accidents all over the world, including numerous fatalities."

Since 1987, when the world was shocked by grave safety violations involving an abandoned therapy source in Goiania, Brazil, which killed four people and produced consequences which arc still inflicting local hardship, the IAEA has recorded six more fatal accidents involving unsafe handling of sources. These events killed eight people and seriously injured over a score of others.

One recent incident, in Estonia in 1994, is emblematic of the tragic problems which can occur if a source is lost and authorities fail to follow up. once it is recovered or found, said John Croft of Britain's National Radiological Protection Board.

In a scrap yard in Tallinn, a source was found by routine radiation measurement and transferred by the Estonian Rescue Board to a national waste disposal facility at Tammiku about 20 kilometers **away.** But on October 24, three unemployed brothers broke into the compound to find items they could sell to scrap dealers in Tallinn. They found a metal container with the source inside. One piece of the source fell out and was picked up by one of the brothers, who put it in his coat pocket. Soon thereafter he fell ill. and he died of severe radiation injuries to his leg and hip on November 2, 1994.

But the injury and death were not immediately traced to radiation exposure, and the remaining parts of the source were left in the house with three other family members. One. a stepson, was hospitalized on November 17 with what was recognized by doctors as severe radiation burns *on* the hands. Only then did the Estonian Rescue Board recover the material they had originally brought to the waste storage site back in October. But other family members were also diagnosed soon after with radiation bums. An analysis of the event by the Swedish Radiation Protection Institute suggested that the deadly item was a Russian-origin cesium- 137 source with a strength of about 100 Curies

As a result of this accident, Estonia began a program to organise its source in ventory. By chance, one of the experts involved in that search had his detecting equipment switched on while driving on the road between Tallinn and Narva He found on the mad a second Cs- 137 source with activity of 50 Curies in another metal container. Estonia doesn't know *haw* many deadly sources are still at large.

Soviets Walked Away'

An unpublished accident investigation report on the Estonian case by the IAEA states, "There appears to be little information on the range of sources manufactured in the former USSR." German officials said that lack of Russian information is only part of their problem in source management

They reported in Dijon that Soviet sources, mostly abandoned in military camps when the Red army decamped in 1991-93, were involved in about 12% of cases involving sources in Germany.

The Soviet military "just packed their bags and walked away" from their huge compounds and barracks in the former East Germany, one German official said. In many cases, they tore down their buildings and left piles of rubble with dangerous sources underneath. Some sources are believed to have been plowed into the ground when the area was razed for development after western German investors took over. "We'll never know the consequences until the sources are found or their contents trickle up to the surface, or down into the water supply," one German expert said. Another fatal recent case involving a radiotherapy source, in Kutaisi, Georgia, in 1996 is also the legacy of Soviet military occupation.

During that summer, several frontier guards in a camp which had been set up as a training camp for a nuclear, logical, and chemical warfare programs of the Soviet Army developed radiation lesions. A search for the cause turned up 11 Cs-137 sources, each with an activity of about 4 Curies, plus four weaker sources, of a type used by Soviet Civil Defense specialists. Some of the sources were buried around the camp site, while others were found in coat pockets. One of the victims of radiation poisoning the sources is dead.

Need for an IAEA Register

Experts at Dijon said that failure of the U.S. to keep track of 1.5-million sources was typical of many large countries where sources abound and where, out of complacency, no effort has ever been made to develop a running inventory. One Russian official said that radiation protection authorities in his country had "absolutely no idea" how many sources might have been in use. "The number might be 100,000 or it might be 1-million;" he said.

Guenter Weimar from Germany's Federal Ministry of environment (BMU), told the conference that outcome of the meeting should be a resolution to register lost and found sources with the IAEA. Germany learned that lesson in 1997 and this year, when four Cs-137 sources were found in three scrap heaps. German investigators found that a source, unshielded on a scrap pile last year, had been manufactured by a French firm about 30 years earlier. "But we don't know anything about its history in between the time it was made and when we found it," Weimar said. An IAEA registry of sources known to be lost or found could expedite identification across national lines, he said.

Scrap yards and steel mills are threatened with contamination when their operations accidentally melt sources found in scrap raw materials, experts noted. They, too, would be aided in watching for sources if their governments arc alerted by the IAEA that sources were recently lost or reported stolen near points where the firms had purchase scrap metal. Because it was unaware that a source had melted in its scrap, the Spanish stainless steel firm Acerinox lost valuable time in following up, generated huge volumes of waste, and suffered an economic loss of about S25-million earlier this year.

Based on a report by Mark Hibbs in Nucleonics Week.

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The Mirror Across The Border

Nuclear Circus Comes To Town

What is the May 28th nuclear circus for? One could take the government's word for it and accept that it is a celebration of "self reliance" of an "impregnable defence." Given that the government is in such denial about what is happening in the country and habitually lies even to itself, it is better to not take such answers seriously. The circus itself, however, has to be taken very seriously. It offers a glimpse into the future.

The nuclear circus is clearly meant as a prop in the narrow political sense. It is being put on as an opportunity to deepen and broaden support across the country for the government and for nuclear weapons. One need look no further than the planned celebrations which are said to include "a competition of ten best milli songs, seminars, fairs, festive public gatherings, candle processions, sports competitions, bicycle races, flag hoisting ceremonies etc. People will offer Namaz-e-Shukrana as well. Apart from this special programmes for children would be arranged. Debates would be held among school children."

To make sure that no one misses out on their quota of this new common-sense about the great and vital contribution made by nuclear weapons, and those who made them, to Pakistan there are to be appropriate programmes "broadcast on national network as well as locally by all 24 stations of the radio. In addition ot the national language Urdu, programmes in regional languages, including Punjabi. Sindhi. Pushto. Balochi, Brahvi. Saraiki. Potohari, Hindko, Balti and Shina will also broadcast The external service and world service will air special programmes in 15 foreign languages for listeners in Europe, Middle East, Africa and South East Asia. The Azad Kashmir Radio will also broadcast special programmes on the occasion in Kashmiri, Gojri, Pahari and English languages."

This would be all harmless entertainment if it was not centred on nuclear weapons. But it is. There has probably never been an occasion like this before, where a state used all its resources to build into its very national identity a pride in its capacity to commit genocide. As Mushahid Hussain proudly put it "Chagai has become a symbol of Pakistan's identity all over the world " If it succeeds at its efforts at creating a nuclearised nationalism, Pakistan, henceforth, shall be a country whose identity is based not just like others on a sense of a shared place, or history, language, culture, or even religion. This identity shall centre on a technology, and that too a technology of mass destruction. Rather than simply being a nuclear weapon state, it may become the first truly nuclear nation

For this reason, the nuclear circus is fundamentally immoral. It is nothing less than a state sponsored celebration of mass murder. Weapons are tools of violence; and nuclear weapons the ultimate in such tools. All decent people detest them. No one should glory in their existence, never mind their possession.

The attempt to create a nuclear nationalism raises the question of how Paki stan will ever deal with nuclear disarmament. For the ringmasters of the nuclear circus, that day is obviously never to be allowed to dawn. Whenever the question of disarmament is raised, they will point to the public support for nuclear weapons (hey have worked so hard to manufacture and say: "How can we? Our people will not permit it. They want nuclear weapons." With this they arc trying to close permanently the door to real peace. Far better in their view a hate-tilled nuclear-armed confrontation with India that in turn gives cause for demands for high military spending, and excuses state failure and government excesses in every other area.

The nuclear circus *is* also obviously meant as a national distraction. It shall be a brief respite from the daily experience of failure that consumes the time and energy and resources of the people of this country. There is hardly any point in recounting either the specific failures or the crises that have created them. It *is* all so well known. But it *is* worth doing as an act of solidarity with Najam Sethi, the editor of The Friday Times, who absolutely correctly observed

in his speech in India on April 30th that "Pakistan's socio-political environment is in the throes of a severe multi-dimensional crisis. I refer to six major crises which confront Pakistan on the eve of the new millenium: (1) the crisis of identity and ideology; (2) the crisis of law, constitution and political system; (3) the crisis of economy; (4) the crisis of foreign policy; (5) the crisis of civil society; and (6) the crisis of national security."

It is these fundamental political and social crises that the glitter of the nuclear circus and the rocket's red glare is meant to conceal. The success of May 28th is meant in one single act to overcome fifty years of abject failure to do anything but fail. This is why May 28th is now declared to be the most important date since independence. It is meant to mark a new beginning, the rebirth of a nation.

This third birth of Pakistan, after 1947 and 1971, is however no more auspicious than the first two. Each birth has been violent and produced violence. The first, out of the horrors of partition, failed to produce a viable constitution and led to military dictatorship and twice to war. The second birth, out of the slaughter in Bangladesh, failed to produce democracy and led to more dictatorship, and the sectarian demons who now haunt the land. This third life, born out of nuclear explosions, carries the threat of terminal violence.

It is worth delving a little deeper into what the nuclear circus is meant to conceal. It is meant to be an affirmation of strength, "virility," and pride (at least that is what President Tarar called it). What this tries to conceal, if not erase, is that events after the May tests provided clear evidence of how weak this country actually is. The sanctions that were imposed by the international community after the tests were lifted not because the world was awed by Pakistan's new nuclear might, but because for once they took a really good look at it and were horrified by its obvious weaknesses. Sanctions were lifted because otherwise the country would have fallen apart and nobody wanted to see that happen. It was an act aimed to protect Pakistan from itself- or more accurately, to try to protect its people from the criminal stupidity and recklessness of its leaders.

It is easy to see how having to accept this realisation of weakness would have created a crisis among those who were responsible for taking the decision to test. On the one hand they tested nuclear weapons and thought of themselves as being strong and having broken the "begging bowl." On the other, the world offered them pity and charity, because otherwise the country would collapse. And thus the nuclear circus as a way of ridding these fears and memories from their minds, of burying them forever. The louder and brighter and more strident the circus, the deeper the anxiety about being weak shall be pushed and more determined the attempts to deny it.

Given how personal politics has always been here, there is no avoiding the fact that the nuclear circus is also a form of self-gratification - a way for Pakistan's current crop of leaders to make themselves feel better about themselves. They know, at one level, that the rest of the world looks on them as not just venal and corrupt, but pathetic and pitiful figures ruling a country struggling to keep its head above water and who have to be protected from the consequences of their own actions. During the circus though, the nation will unite "to pay tribute to the courage, statesmanship and maturity of Prime Minister Nawaz Sharif' as one government press release put it. The government will make sure of it.

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From The

A Long Way To Go

A march for global peace was begun on the first anniversary of the bomb blasts at Khetolai near Pokran. It will go up to Sarnath near Varanasi reaching there on 6th of August to coincide with the anniversary of the first use of such bombs on people. The marchers shouted "Our slogan is world peace, the future belongs to us; and "Victory to life". Yet in Ramdeora near Pokran, some fifteen young men threw stones at the marchers causing a grievous head injury. Perhaps these enthusiasts want victory to death. But why pick on these few bajarangis. The ruling party launched its election campaign the same day, hoping to remind the people of its great achievement. In an insane society, the sane who need justification.

Even friends, people who clearly say, "We need to reject nuclearisation because of its social cost, new patriarchies, danger of state authoritarianism, damage to the environment, erosion of citizens' rights from a standpoint of democratic and ethical principles" make a distinction between nuclear energy and nuclear weapons. They fail to see the simple fact that nuclear energy and nuclear weapons are one and indivisible. One cannot logically oppose one and support the other. The best example of this is provided by the deal with Russia to buy two VVER reactors, presumably because Indian-scientists are so busy making the bomb that they cannot be expected to fulfil their targets for nuclear energy as well. There is also the matter of the nuclear powered submarine, a highly expensive submersible tub needed to hide those grand weapons from the enemy so as to keep the minimal nuclear deterrent, credible. Indian 'scientists' who seem to be so good at making nuclear firecrackers and long range missiles with exotic names have been miserable failures in designing a nuclear powered submarine. As a result, we have no choice but to accept whatever junk the Russians offer not only for the submarine but also for the nuclear power plant. Yet people with blinkers take a benign view of atoms for peace! We have a long way to go.

Pokran Revisited

Ground Zero & Zero Tolerance State

From Jodhpur the road shoots straight as an arrow across the desert to Jaisalmer, 300 km away; almost exactly halfway is Pokran. The giant hammer of the sun crashes down with soundless fury on the flat anvil of the scrub-covered plain. An occasional deer bounds over the thorn bushes, lured by the mirage of water shimmering in the distance. A year after Shakti the illusion is particularly apt.

Pokran II was the most re- sounding statement about the power of the Indian state to be made in decades. Its reverberations have been international: pro or anti, everyone now had to take the Indian state seriously. But how serious is that state about taking it- self seriously? How strong are its powers of intervention? And how uniform or selective is their manifestation? After the blast, what is the ground zero reality of Pokran today?

A 20-minute drive from Pokran is Khetolai, the village nearest to ground zero. Ground zero itself is completely out of bounds for civilians Khetolai, now famous for its cracked houses and cancer patients, is home to the Bishnois, the first conservationist community in the world. Their religious beliefs forbid them from felling trees and killing animals and some have even died while trying to protect the environment. It is a grim irony that they should have been chosen to bear the cross of Shakti.

Skeptical Villaege

A dusty road through the scrub leads to the house of Rajkumar Bishnoi, a school teacher in the village where a Sunday morning meeting is on. The villagers are skeptical of being heard where it really matters, having bared their collective soul to a voyeuristic media on many occasions over the past year. "You are from Delhi, tell us does anybody really care about us?' asks Sukhram, a young man.

Khetolai knows the answer. Il has never waited for the state to deliver. It has quietly usurped the state's role, much like a copybook cooperative society. Education is a religion here. The village is fully literate barring those some who have married into it. The student- teacher ratio is ten to one.

Recently, (Sohanram Bishnoi. the secondary school headmaster, has devised a novel way of encouraging women to join the literacy drive. He has put up a blackboard near the water tank where they come daily with a new lesson written on it each day. Water is a major problem. Kane han. Radha and Bhagwati say that 20 to 25 trips a day to the tank is normal. Until last year, the only source of water was a pipeline from Lathi, 25 km away. The villagers collected Rs 70,000 and built a tank themselves

Bleeding Cows

The water quality is appallingly poor. In the past year, the villagers have had to drink water that could well be radioactive. Rajkumar, a villager, says some JNU researchers came earlier with counters to measure radioactivity, but have not been heard about since then. But since the blasts, several people have been complaining of smarting eyes, bleeding noses, kidney and heart ailments and skin diseases

Cows in the village have been seriously affected by the Masts. Their udders are blocked and frequently bleed and some have gone blind. Repeated requests to the authorities to investigate the fall- out of the nuclear tests have been ignored."This is a gross violation of human rights, don't we have a right to know if we are at risk? asks Rajkumar. The village has only a dilapidated dispensary with no medicines or doctor.

Khetolai is a microcosm for the India that the state has shut itself from. A world away from Khetolar is Tilak Marg in the bean of Delhi, one of the selected thoroughfares in the capital to be officially designated as a Zero tolerance zone': Even the most minor traffic infringement on this stretch will be stringently and immediately punished. Yet Delhi has the macabre distinction of being the road-death capital of the world; there are more traffic fatalities every year in Delhi than in any other city With a few notable exceptions such as the so-called BMW incident' earlier this year when four people were mowed down by a speeding auto- mobile, by and large, these killers on wheels gel away scot-free. 'Zero tolerance' succinctly sums up the selective nature of the state: within certain narrowly defined parameters social, economic and political — it displays zero tolerance of even the smallest technical transgression. And as if to make up for this blinkered severity in most other areas it scores zero in registering and responding to the legitimate rights of its citizens. Hollowing the shoot ing of a young woman in a crowded Delhi restaurant where alcoholic drinks were illegally being served, state authorities have shown zero tolerance of the unlicensed sale and consumption of liquor; officialdom has also demonstrated near zero performance in controlling the proliferation of firearms and other lethal weapons in the capital and elsewhere in the totally un monitored reaches of the country. In the name of national security, the state has zero tolerance of anyone taking a photograph of even civilian airport facilities anywhere in the country; yet gun-runners can with impunity evade an Indian Navy blockade, allegedly with the connivance of top-level elements of the zero performance state. The

zero tolerance state frowns at enduring illiteracy; the zero performance state permits the proliferation of schools which have no blackboards, no text- books, no teachers, and often no students but are deemed to be schools nonetheless.

Market Fills Vacuum

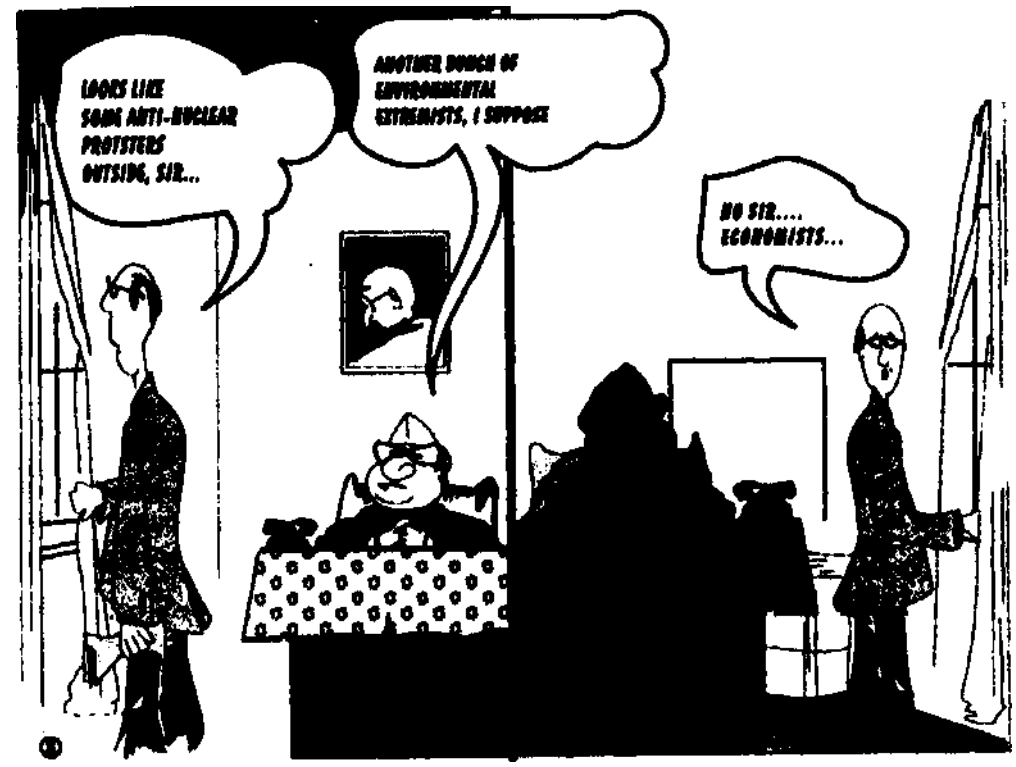
The Indian state as it exists today is like the

> *"Yesterday upon the stair*
> *I met a man who wasn't there*
> *He wasn't there again today,*
> *I wish to God he'd go away."*

oppressively absent presence of the 'man on the stair' in the anonymous doggerel.

Last week when the hills of Garhwal were a blazing inferno, a correspondent for this newspaper who was covering the catastrophe tried to find a public call office to telephone her report in to Delhi. She was unable to find a single PCO in that area; telecommunications as an instrument of the zero tolerance-zero performance state simply do not exist in that part of the country. But the ground in the remote forest was littered with plastic bags; a tiny shop in a village without electricity stocked bottles of Pepsi and Mirinda. The zero control state had yet to reach the village; but in the vacuum, the market had set up shop.

Jug Suraiya
Sanghamitra Chakraborty
Times of India llth May 1999



Study Finds Radioactive Particles May Be More Damaging than Expected

Cells may be more sensitive to genetic damage caused by radiation from radon gas than previously believed, according to research that found high energy particles do not need to hit the nucleus of a cell to cause DNA changes.

In a laboratory study, researchers aimed alpha particles — a decay product from radon gas — at the fluid surrounding nuclei in cells taken from a hamster, and they found that radiation could cause genetic changes.
'The prevailing view has been that in order to cause genetic damage you have to irradiate the DNA directly in the cell nucleus," said Gerhard Randers-Pehrson of Columbia University, a co-author of the study in the Proceedings of the National Academy of Sciences. "What we find is that you can irradiate outside of the nucleus and still cause that type of damage."

Radon gas can leak from the earth and collect in basements. When inhaled, the gas can leave in the lungs alpha particles that emit low levels of radiation over long periods of time. Just how much radon poses a health risk has been controversial, but the Environmental Protectection Agency recommends that the concentration of radon gas in homes be kept below 4 picocuries (a measure of radiation) per liter of air. Radon cancer risk estimates have been based, in part, on the belief that mutations that can lead to cancer occur only if radiation particles directly hit the cell nucleus that contains the DNA.

In the new study, Randers-Pehrson and his colleagues used a machine to zap cytoplasm, the part of the cell outside of the nucleus, with precise numbers of alpha particles. The number of particles is representative of the intensity of radiation exposure. They found that cytoplasm hits of three to eight particles could trigger a genetic change in a cell. Randers-Pehrson said they also found that when the cytoplasm was hit, the cells tended to survive and were more likely to pass mutations into new generations of cells, a critical step in the formation of cancer. Alpha particles striking the DNA directly tends to cause such extensive damage that the cell is generally killed and does not make hew cells, he said.

Source: Associated Press 26.4,' 99

Nuclear Power's Bright Future is Already Past

Two decades after the world's first major nuclear accident at Three Mile Island, the nuclear industry is experiencing a meltdown of historic proportions. After growing more than 700 percent in the 1970s, and 140 percent in the 1980s, nuclear generating capacity has increased less than 5 percent during the 1990s so far. In the last decade, nuclear power has gone from being the world's fastest growing energy source to its slowest, trailing well behind oil and even coal. In 1998, world nuclear generating capacity fell by 175 megawatts.

At the 20th anniversary of the Three Mile Island accident on March 28, global nuclear capacity stands at 343,086 megawatts, providing just under 17 percent of the world's electricity. Both of these figures will likely turn out to be close to the all-time historical peak-and less than one-tenth the 4,500,000 megawatts that the International Atomic Energy Agency predicted back in 1974. The WorldWatch Institute projects that global nuclear capacity will begin a sustained decline by 2002 at the latest, and the U.S. Department of Energy projects that it will fall by half in the next two decades.

Nuclear power's biggest problems are economic: it is simply no longer competitive with other, newer forms of power generation. The final 20 U.S. reactors cost $3 to $4 billion to build, or some $3,000 to $4,000 per kilowatt of capacity. By contrast, new gas-fired combined cycle plants using the latest jet engine technology cost $400-$600 per kilowatt, and wind turbines are being installed at less than $ 1,000 per kilowatt.

Even France, which gets more than three-quarters of its electricity from nuclear power, now has a moratorium on nuclear plant construction, and other European countries are debating how quickly to shut their plants down. The only countries still building nuclear power plants ait nations such as China, Japan, and possibly Inn, where the electric power industry is still a government sanctioned monopoly that is protected from compaction.

By the end of 1998.429 nuclear reactors were operating worldwide, one less than five years earlier. Construction is taking place at 33 new reactors. Of these, seven are likely to be completed by the year 2001, while another fourteen may never be completed. Although global capacity is likely to rise for another year or two, it will almost certainly decline precipitously in the following years as the construction pipeline dries up. and the closure of older, uneconomic, or unsafe reactors accelerates.

In the aftermath of the 1979 Three Mile Island accident, the U.S. nuclear market was the first to deteriorate. No new nuclear plants have been ordered since then, and where nuclear generating capacity is now lower than it was a decade ago. Not only have U.S. power companies stopped building nuclear power plants, they have closed six reactors since 1996 that had become too expensive to operate. Meanwhile, seven of Canada's 21 reactors have been 'laid up" due to safety concerns and are unlikely to operate again.

For North American nuclear power, though, the worst may be yet to come. Wall Street analysts and the Washington International Energy Group project that as many as one-third of US and Canadian reactors arc vulnerable to shut down in the next five years. The main reason is cost: nuclear energy cannot compete in increasingly competitive power markets.

Western Europe stayed with its nuclear expansion plans longer than the U.S. did, but since the 1986 explosion at Chernobyl sent a cloud of radioactive dust across Europe, the public has turned against nuclear power. Since then, construction has started on only three new reactors. France, long known as the most pro-nuclear country, now has a moratorium on nuclear plant construction, and the Environment Minister, Dominique Voynet, has called for making the ban permanent. A December 1998 poll found that only 7 percent of French citizens thought that nuclear power should be the top energy priority, compared to more than 60 percent who said the priority is renewable energy. The state owned unl ity, Electrieite de France, which has in the past put virtually all its efforts into nuclear power, has begun to invest in "pintsize" microturbines, and in the development of wind power, both in France and in Morocco.

In Germany, the discussion is not over whether to build more nuclear plants, but on how quickly to shut down the existing reactors. While the previous German government shut down al) the nuclear power plants in eastern Germany, the *Social* Democrat/Green government elected in October 1998 plans to phase out the 19 remaining reactors that produce 30 percent of the country's power. As of February 1999. the Government had agreed that the first reactor will be closed by 2002. though the country's electric utilities arc still fighting the plan.

Asia remains the last stronghold tor the nuclear power industry, with 88 reactors operating and 26 under construction, though even there, a slowdown is evident. Japan, which obtains 35 percent of its electricity from the atom, only has two reactors under construction, with work starting on one of them in 1998. In fact, the plant at Higashidori in Aomon was the first new one approved in ten years. Glutens groups have nearly stopped construction of new plants, and some communities have passed referenda prohibiting additional units. Although the government plans to add some 20 new reactors by 2010. officials acknowledge privately that the plans are unrealistic, South Korea, meanwhile, has six additional plants still under construction, but there too. the nuclear industry faces growing public opposition.

Nuclear power plants are dangerous. They are also extremely dirty. But what has killed nuclear power all over the world is the fact that the electricity produced by it is just too expensive and cannot compete in the market-place. It is only bureaucrats wasting public funds who continue to order new nuclear power plants.

China has the world's most ambitious nuclear program today, with plans to go from the three reactors it operates now to more than 50 reactors by the year 2020. The country currently has six reactors under construction, with plans to add four more. Whether the Chinese government will achieve these ambitious aims is uncertain, given the high foreign exchange requirements of imported reactors and the lack of a sizable indigenous industry. Moreover, China is likely to face growing pressure to make its power industry more competitive, which would likely complicate nuclear development efforts. Efforts to develop nuclear industries in Indonesia, Thailand, and Vietnam have all been abandoned in the last few years.

Around the world, it is nuclear power's high cost that has most damaged its market prospects. Most nuclear power plants have been built by monopoly utilities, and the costs were passed through to consumers, regardless of how high they were. But with governments around the world now opening electric power markets to the winds of competition for the first time, nuclear power must stand on its own. This development is the final blow to the nuclear industry. It is only in the few remaining protected power markets-mainly in the Par East-that any additional plants are being ordered.

One indication of nuclear power's economic status is the price it has been commanding on the open market. The Pilgrim plant in Massachusetts was sold for $80 million, though $67 million of that was for fuel. Also last year, CBS decided to sell what was once the world's largest nuclear company, Westinghouse Nuclear. The company sold for just $ 1.2 billion. By contrast, Exxon is valued at $172 billion, and Microsoft at $278 billion.

Orders for new reactors have largely dried up. The few remaining nuclear companies, including France's Framatome and Germany's Siemens, are surviving on maintenance work, and government-sponsored contracts to refurbish Eastern Europe's decrepit reactors. If new business does not turn up soon, there may be little nuclear construction capacity left. In light of the long lead times in nuclear construction, the decline of nuclear power in the early decades of the new century has become virtually inevitable. The U.S. Department of Energy, successor-agency to the U.S. Atomic Energy Commission, now projects a sharp decline in nuclear power generation in the next two decades.

Nuclear industry supporters argue that given recently heightened concern about fossil fuel-induced climate change, the timing is tragically ironic. Existing nuclear plants do displace the emission of large quantities of greenhouse gases from coal-fired plants, but few governments are seriously considering nuclear power as an alternative to fossil fuels.

Instead, they have responded to climate change by investing in new energy technologies such as solar energy and wind power. As a result, renewable energy sources are now expanding rapidly. Last year, while nuclear capacity fell, wind power capacity rose by 2,100 megawatts. These provide tiny amounts of power today, but arc already growing at the kind of double-digit rates that nuclear power enjoyed in the 1970s. And the new technologies are not threatened by the kind of physical or economic meltdowns that have done in the nuclear power industry.

Christopher Flavin & Nicolas Lenssen
Source: Worldwatch website at (www.worldwatch.org)

Fighting the Powers in Koodankulam

S. P *Udayakumar*

There seems to be an uneasy lull in Koodaitkulam. Newcomers attract immediate attention at the Village Square. And talking about the impending nuclear power project pulls a real crowd. There is an ardent fervour in the crowd to pour out their hearts, and an intense anxiety to know about their future.

Most people who engage in conversation are still bitter about the Indian government's land acquisition process for the nuclear power project. They complain that an inadequate amount of Rs. 2,000 was given per acre and a meagre additional amount of Rs. 100 was paid for each cashew tree on the land. Many of these people had tamarind trees on their lands that used to fetch them approximately Rs. 2.000 every year. The lands were taken in the 1980's. and for many people these lands were the only assets their families had.

Many residents of Koodankulam acknowledge that they did not know what the nuclear power project was all about and had very little knowledge about radiation hazards. Some were sincerely hopeful of swapping lands for jobs in the lucrative central government sector. Now they are slowly waking up to the reality that not only the jobs and better life are elusive but they could also be evicted out of the area. Most of them are justifiably concerned about the risks and dangers involved in the nuclear power plants.

There are, of course, people in Koodankulam who support the nuclear power project and are very enthusiastic about it Interestingly enough, many of them have an eye on winning a contract to provide manual labourers and supplies for the construction of the plants and buildings or to undertake portions of the construction itself. The tension between these ambitious entrepreneurs and the anxious landless is very much visible.

Then there is a third group that boasts sanctimoniously with an "l-told-you-so" rhetoric. They claim that they had warned their fellow villagers to be careful about selling their land to the government They say they knew that nothing good would come to them out of the whole project. And now it is too late to do anything.

As a result of all these divisions and confusions, civic courage gives way to superstitious beliefs and resignation. These 'believers' point out that Rajiv Gandhi, who signed the deal with the Soviet Union to establish the project was killed later and that Deve Gowda, who revived the project lost power immediately thereafter. These arc enough indications for them that the nuclear project will never come up in Koodankulam.

Unlike the confused and the contended, there are some individuals and small groups in Koodankulam that engage in active opposition to the nuclear power project. Mr. Thangathurai Swami, who manages his family's anoestral Narayanaswami temple on his family land that lies inside the Koodankulam project compound, steadfastly refuses to sell his land to the government. As he puts it, "1 cannot sell my God and the temple." Devotees from Koodankulam and all the neighbouring villages do come and attend the traditional Sunday worships.

Another Mr. Muthukumaraswamy, a retired schoolteacher from Koodankulam, *it* also resisting the government's usurpation of his land by filing a suit in the Tirunetveli district courts. Besides pointing out the problems due to the inadequate monetary compensation paid by the goveminent for the lands, Mr. Muthukumaraswamilabo cites the Government Orders that farming land and burial grounds should not be taken for this kind of large industrial initiatives.

There is also a dormant group called • 'Nuclear Power Opposition Group' in Koodankulam but the major activity is just publishing some occasional handbills. The tea-stall discussions and village square debates often do not amount to much

If Koodankulam is this indecisive, the surrounding villages and towns are not doing any better. There is a plethora of social service organisations in neighbouring villages such as Thisayanvilai. Meignanapuram. Nangunen. and other places in Kanyakumari, Tirunelveli. Thoothukudi and Madurai districts.

In Kanyakuman district for instance, the Social Action Movement (SAM), an umbrella organisation comprising of some social work agencies, carries out some awareness raising campaigns on the Koodankulam issue. Just like Mr. D. Mathias of SAM. Rev. Y. David of the Samathuva Samuthaya lyakkam (SSI), loosely translated as Social Equality Movement, has also been educating the public about the dangers of nuclear power projects since 1988. Quite a few organisations that concentrate on an assortment of social is sues also discuss the Koodankulam project The Palmyrah Workers' Development Society (PWDS) of Dr Samuel Amirtham. the Peace Association for Social Action (PASA) of Dr. Gnana Robinson and other such organisations take interest in the nuclear power project issue.

An important actor in the anti-Koodankulam mobilisation is the National Alliance of Peoples' Movements (NAPM). that works in close association with many farmers' unions, fishworkers' groups, and the local chapters of the National Fishworkers Forum (NFF), and the Tamil Nadu Fishworkers Union (TNFU). The NAPM conducts periodic seminars and occasional workshops on various issues including the nuclear project. Recently the NAPM or-

ganised workshops in Madurai, Tirunelveli and Nagercoil on the safety aspects of the VVER light-water reactors that are going to be installed in Koodankulam.

Although fears of radioactive contamination figure prominently in many of these groups' campaigns and pamphlets, environmental dangers, health risks, nuclear waste disposal issues are also often raised. The impending diversion of Pechipparai dam water for the Koodankulam nuclear power project is also causing grave concern among the farmers of Kanyakumari district and adjacent areas.

Another popular issue that political parties often resort to is providing job opportunities for the people of Koodankulam. On February 9, 1999, the local Tamil Manila Congress MLA, Mr. Appavu, headed a dharna in Koodankulam with the singular demand of giving job opportunities to the people of his constituency that includes Koodankulam and other nearby villages.

One can also encounter handbills and pamphlets put out by many nameless and faceless groups such as 'All College Students' Federation,' and 'Koodankulam Nuclear Reactor Opposition Group' etc. Although the English press publish articles by prominent writers and thinkers such as Buddhi Kota Subbarao, S. Ambirajan. Prema Nandakumar, G. Balamohanan Thampi, Dhirendra Sharma,T. Shivaji Rao, and Iravatham Mahadevan arguing persuasively against the Koodankulam project, the local Tamil newspapers are strangely indifferent.

Despite the fact that all these social, political and intellectual entities are sounding alarms, they are relatively dispersed and dissimilar. The various social movements have not made many inroads in educating the public, or making a dent in the policy-making processes. The ideological and organisational discordance among some of these groups and leaders, financial issues, the insistence on one's own group getting the limelight are some of the handicaps they seem to have. There are also groups that do not want to jeopardise their government funding by being too much proactive on the Koodankulam issue.

Some of the anti-Koodankulam movements adopt a narrow 'not-in-my-backyard' approach. They just do not want a nuclear power project in their vicinity and do not care what happens next or where it is moved. However, some other groups take a principled stand and adopt a broader approach on the issue by stretching their interest to other nuclear power projects such as Kalpakkam near Chennai. They highlight the disastrous effects of the Kalpakkam reactors on the neighbouring coastal areas and the fishworkers' livelihood in those villages, and demand either closure of the plants or specific modifications.

Some of the nuclear power project denunciations betray anti-urban and anti-elite sentiments also. One such argument proposes that nuclear power projects should be built in or around the national and state capitals because that is where the elite lives and work. The proponents of this plan wonder why the Nuclear Power Corporation (NPC) office is situated in Nagercoil instead of Koodankulam itself. They question why the Prime Minister visited Pokhran not on the same day of the nuclear tests but almost after a month. The implied contention is, of course, that the elite knows how to take care of themselves and safeguard their interests by being away and insulated from these potentially dangerous projects. It is the poor who bear the brunt of all these projects and pay the heavy price.

Many people in and around Koodankulam think that the government will go ahead and establish the nuclear power project in Koodankulam and will eventually close it down if and when there is an accident. Dr. S. Thasan, a retired Tamil Professor of Marthandam Christian College, reasons that it is the general trend of our times that people ignore advice and warnings but feel sorry and make amends when disasters strike.

The Indian government is turning a deaf ear to local concerns and protests, and pressing ahead with the project. Dr. Rama Rao, Chairman of the Atomic Energy Regulatory Board, claimed in November 1998 that the site evaluation for Koodankulam had been done (The Hindu, November 6, 1998). A former member of the 'safety committee' constituted by the Central Government for the Koodankulam project claimed in April 1997 that the environmental issues had already been studied (The Hindu, April 7,1997). Intriguingly enough, government officials rarely mention this environmental impact study on the project, and individual efforts to get a copy of this study from New Delhi authorities have proved to be futile.

In the meantime, the Indian nuclear establishment has been organising workshops and seminars to mobilise the public-opinion in favour of the Koodankulam project. A two-day workshop in July 1998 on "Atoms in the Service of Mankind" sought to educate school teachers about the various aspects of the country's nuclear program and other current issues such as CTBT and NPT (The Hindu, July 25, 1998).

In a November 1998 seminar attended by the representatives of the Russian and Indian nuclear departments and academics, the Indian nuclear authorities revealed the entire structural and safety details of the VVER reactors. At the Indo-Russian seminar, Mr. Bulat Nigmatullin, Deputy Nuclear Energy Minister of Russia, said: "It [the seminar] is intended to inform the Indian public at large, mass-media bodies, independent experts and other possible seminar participants about Russian know-how and our many-year-old positive experience of operating and maintaining NPPs in the fullest possible and most objective manner. We also plan to inform them about other aspects of building, operating and maintaining nuclear power facilities in Russia and other countries, linking this with the projected Koodankulam NPP" *(The Hindu, November 6, 1998).*

Furthermore, the Department of Atomic Energy has established a Homi Bhabha Chair for Nuclear Science and Rural Society at the M. S. Swaminathan Research Foundation (MSSRF). Chennai, with the primary objective of disseminating information and mobilising peaceful usage of nuclear energy for the benefit of communities living in the regions adjoining the nuclear power plants (The Hindu. December 11, 1998). If anyone from Koodankulam or surrounding villages were invited to any of these rather technical events could not be independently verified.

The lack of coherence and focus among the various movements on Koodankulam is painfully obvious when we consider the fact that some of these latest developments are not widely discussed. Another pertinent issue that has been overlooked by the Koodankulam movements is the handling of the spent fuel.

According to Dr. Y. S. R. Prasad, Chairman of the Nuclear Power Corporation, the fuel for Koodankulam reactors would be supplied by Russia, but the spent fuel would not be sent back. It may be reprocessed to extract Plutonium, a key fuel for the fast-breeder projects that will be established in India in the future. When asked if a reprocessing plant would be set up at Koodankulam, Dr. Prasad said that it was too early to think about that (The Hindu, November 5,1998). There is hardly any debate on the implications of this ambiguity, the additional dangers of this reprocessing plant, the added risks the local people face and so forth. No one is questioning if the local people do not have a say in this issue.

Most importantly, the various Koodankulam movements hardly debate the alternatives to nuclear power in the larger framework of national development It is quite ironic that numerous windmills that produce electricity quite profitably surround the proposed site in Koodankulam for nuclear power project The viability and rewards of such renewable energy systems are also not highlighted by the protest movements. *Continued on page 13*

Russia, rolling in money, offers $2.6 Billion loan for Koodankulam

The Russian government has offered a soft loan of $2.6 billion for the abstraction of the Koodankulam nuclear power plant in Tamil Nadu, according to a report here. Russia's state-owned Vneshekonombank has sent a message to the Indian government pro posing the loan to supply the two 1.000 M W light water reactors for construction of the power plant. Itar-Tass reported.

Russia's economic crisis notwithstanding, the credit has finally been ottered for the implementation of the nuclear project that for many years was the centre of a controversy involving the U.S.. Russia and India. Russia made up its mind to go ahead in keeping its commitment to the Indian government in spite of American opposition Moscow and New Delhi signed a new supplement to their agreement of 1988. during the Soviet era. working out the payment terms.

The credit offer sets the stage for the execution of the project, which is being handled primarily by Atomstroieksport, the organisation that fulfils Russia's commit ments in building nuclear power plants abroad, and the Indian nuclear energy establish ment. The project involves more than 200 Russian organisations and enterprises.

"Russia will issue to India a credit for construction of the nuclear power plant at Koodankulam in hard currency and only ten per cent of the total costs of the construe non work will be financed through rupees generated out of Indian debts to the former Soviet Union." Itar-Tass reported, quoting Russian Ambassador to India Albert Chernyshev.

Russian specialists would mount the main assemblies in the primary circuits of the reactor and monitor the installation of the power-generating units at the plant According to the terms of the agreement, the Indian specialists would undergo advanced training in Russia. All the building operations of the plant, whose commissioning is expected to take six to seven years, would be monuored by the Vienna-based International Atomic Energy Agency (IAEA). India *Abroad News Service*

Impoverished Russia willing to sell land to raise funds to pay back wages of nuclear employees

US company Non-Proliferation Trust Inc is necking approval to take tide to at 'least 6000 tonnes of spent fuel from countries such as Taiwan. South Korea and Switzerland and ship it to Russia for storage for at least 40 years. The proceeds of the venture expected to be at least US$4 billion - would go towards the disposal of 501 of excess Russian warhead plutonium, cleaning up contaminated nuclear sites in Russia, paying back wages of Minatom employees, and helping Russian pensioners and orphans. The company had originally proposed a cradle-to-grave fuel leasing scheme with storage at Wake Island in the Pacific Ocean. *Uranium Institute News Summary*

WININ PEREIRA 1928-1999

Winin Pereira, died on February 5th. He had lived in Bandra. Here he was able to trace his Catholic heritage for the last three hundred years. Until the previous generation, the family had spoken Portuguese, even though Bombay had been 'given' to Britain as part of the dowry of Catherine of Braganza in 1661. Winin Pereira's father was a social reformer and committed to India's Freedom Movement.

Winin Pereira trained as an atomic physicist, and worked at the Tata Institute of Fundamental Research and with Homi Bhabha at the Atomic Energy Establishment. Increasingly perturbed by the danger posed by India's uncritical assimilation of Western science and technology, he resigned. This was regarded by the Indian establishment as a betrayal, and he was never to be officially employed again. He turned to development projects in Maharashtra, associated with a number of agencies; but soon became aware of the negative consequences of the received wisdom, including the promotion of chemical fertilisers and pesticides, cross-bred cattle and hybrid seeds. In consequence, he turned away from the conventional developmental path, and spent more and more time in an Adivasi rea. He had a small farm in Alonde, where he was happiest, learning from those who had lived symbolically with the forests for millennia without disturbing the ecological balance of the land, of which they regarded their own lives as an extension and an expression.

He began to collect examples of truly sustainable agriculture; and amassed a formidable reserve of knowledge of how things had been done, and how these continued to reverberate in popular memory. Having inherited his father's distaste for colonialism, he was acutely aware of the continuities between the British Raj and the Raj of the IMF/World Bank/transnational which have now replaced it. This, he felt, was made explicit after the Indian government formally embraced the liberalisation programme of 1991. He got out of the projects he was engaged on, and at his home in Bandra, set up the Centre for Holistic Studies. This was devoted to an analysis of the impact of SOO years of colonialism, and to the recovery of alternative, indigenous social and economic values. He turned to traditional Indian culture, respect for all things, living and non-living, the doctrine of ahimsa and minimal interference in nature. The Centre became a resource-centre and library with extensive databases. It offered support, information and encouragement to peoples' movements fighting unjust development, most recently, to those farmers resisting the Dabhol power project in Maharashtra. I met Winin in the mid-eighties: it was, for him a lean time. India was more and more committed to industrialism, consumerism seemed to have seized the imagination of the growing middle class, and few people were interested in recuperating what at that time appeared to be decaying traditions of frugality, self-reliance and the kind of modest security which the Adivasis had practised, and Gandhi had advocated. At that time, he felt isolated and disillusioned.

The first time I met him he sat opposite me, as the sunlight, reflected from the Arabian Sea, played in the room, kept cool by the creepers and fish-tail palms that had been planted around the plain house in Carter Road. I immediately recognised someone with whose sensibility and heart there was the kind of sympathy that requires no explanations • those rare encounters of the spirit that give new meaning and hope to our lives.

He invited me to stay with him and his family; and without hesitation I accepted. It was a kind of homecoming, this meeting of strangers who, through quite different social and cultural experiences had reached a common understanding. We worked together and I was instrumental in getting some of his work published. His first book, Asking the Earth, appeared in 1990. From him I learned much about India, its colonial history, the destmctiveness of an invasive culture of consumerism in a country where the basic needs of more than 40 per cent of the people remain unanswered. Above all, he taught that social justice and respect for the environment are indivisible. If one takes precedence over the other, we fall into, either the uncritical acceptance by Marxists for industrialism, or into the error of a deep ecology which is prepared to save the planet even if the people perish. To give equal weight to social justice and to conserving the resource-base of the earth is a very radical project indeed: for this seriously challenges the existing developmental model which requires at the same time ever more extravagant abuse of the earth and growing inequality, all under the grandiose and banner of 'wealth creation'. Winin Pereira raises issues about different measures of wealth, other forms of justice, fresh definitions of human purposes, new ideas of well-being.

Winin Pereira was himself a curious and contradictory figure. Although he wrote all the time about overcoming the crisis of industrial society, he was not a practical man. I went with him once to the little hut in Alonde. It was extraordinarily beautiful • he could name every tree, shrub and bird; but the food we had taken was eaten by rats because we had failed to secure the cupboard door. Trying to cook something out of a tin over an open fire, we dropped it and went supperless. We laughed at the paradox that we were offering prescriptions for the survival for humanity, yet could scarcely survive a single night on our own. Indeed, without the practical and loving support of his family, Winin's work could scarcely have been abstained.

In the last decade of his life he rarely left his home. He was completely uncompromising, convinced (hat the existing paradigm would collapse, and that, whatever happened to the people of the West (whom he thought doomed, because of their total dispossession of survival skills by market-dependency), India would revert to traditional village self-reliant culture based upon the land and the local production of necessities. He could be intransigent at times; but was utterly incorruptible, refusing foreign funding, and maintaining a monastic dedication to his work, even though enfeebled by strokes and the onset of Parkinson's disease. He lived to see more and more people acknowledging the impossibility of the project of 'globalisation', which had over taken the internationalism to which he was himself committed.

Although I could not entirely share his apocalyptic view, nor regard the prospect of collapse of industrial society with the equanimity with which he viewed it. I came to love and respect him. He was a passionate man. ultimately optimistic, despite a certain melancholy. His was a search for just, sustainable and practical forms of development, justice for all those living now and for an indefinite number of future generations. He celebrated people's knowledge, and what he called 'liberation technology' over Western science, and if to some he appeared backward-looking, this was only in order to bring to the future some of the wisdom of the past that was being wiped out by a barren industrialism that only conjured new poverties out of the very wealth that was supposed to emancipate humanity.

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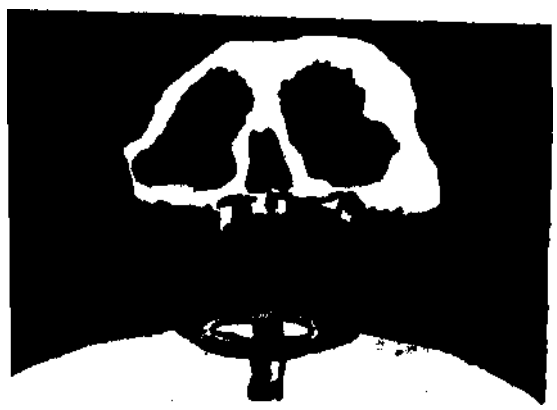

The Heat Is On

Koodankulam and Climate Change

V *T Padmanabhan*

After the Pokhran explosions, the fund starved atomic energy programme in India has received u new lease of life. Work on the third and fourth power stations at Tarapur and Rawatbhatta has started. The Russian turnkey project for setting up two 1000 Mwe pressurised water reactors (PWRs) at Koodamkulam on the South East Coast has also been revived. In terms of installed capacity the Koodamkulam site will be more than that of all the 8 plants operating in four states in India. All further expansions *of* nuclear power in the country need be hailed, because of the well-known safety and economic problems.

Two of the three proposed sues. Koodamkulam on the East Coast and Tarapur on the west coast have serious safety problems, related to global wanning, rise in sea level and the cyclones and floods. This risk has not been part of the debate on nuclear safely in India

In 1995. the Intergovernmental Panel on Climatic Change (IPCC). a UN body made up of 2.500 scientists concluded that "a pattern on climatic response to human activities is identifiable in the climalological record", this human (rather inhuman) being the burning of fossil fuels and clear ance of forests, which cause an increase in the concentration of carbon dioxide (CO2) in the atmosphere, The current emission of CO2 is estimated at 7.5 billion tonnes a year, of which fossil fuel is responsible for about 6 billion tonnes. In spile of the pious fectaration at Rio-de- Jancino, the emission rate is increasing alarmingly, thanks to he intransigent position by US and lobbying work by the petromafia.

If the current trend continues, within about 15 years, major calamities can be expected *on* the coastal areas. According to IPCC projection of 1995. between 1990 and 2000 AD. global temperature will rise by 1.0 to 3.5 degrees Celsius (1 8 . 6.3 degrees Fahrenheit) Global average temperature was just 3 to 5 degrees C cooler during the last ice age than it is today. A warmer atmosphere and warmer sea results in greater exchange of energy which leads to tropica) storms, tornadoes, thunderstorms and hailstorms. The projected increase in temperatures could increase the destructive potential of hurricanes by 50%. Storm winds as high as 350 kms per hours will not be unusual, The recent increase in the frequency and the destructive power of natural calamities experienced in India and globally has been linked to the climatic change.

While the causes of wanning are global and its prevention depends upon the activities of the global governments, its impact will be fell by local communities, in other words, even if the national government is helpless in reducing the global emission, protection of the areas under threat and measures to reduce the damage is well within the role of the national government. Global climatic changes do not appear to have figured in the agenda of the planners in India.

Work on Koodamkulam project is expected to commence in 2000 AD. The project might be ready in another ten to fifteen yean. Ifcommissioned in 2010 AD. the plants are expected to generate electricity for the next 30 years. After iu useful economic life, the reactors will stand there for another 100 years, which means, decommissioning will be complete in 2140 only.

During one year of its operation, VVER 1000 reactors will consume 60 tonnes of uranium, enriched to 3.5%. About 2 tonnes of U23S in the fuel bundle will be burnt (fissioned) in a year, leaving 58 tonnes of highly radioactive spent fuel, which will have plutonium, uranium and tens of fission and activation products. After removing from the reactor core, the spent fuel will be kept in a cooling pond for over a year. This will contain long-lived and highly radioactive elements. There will be about a tonne of plutonium, the raw material for bombs. Spent fuel is either reprocessed for extracting plutonium and unburned uranium or kept under surveillance till disposal methods are evolved.

As per the agreement, the spent fuel will be transported to Russia. This is very unlikely due to the increasing opposition to such shipments. Moreover, with a huge stockpile of fissionable material, Russia will not be very keen on taking back the dirty cargo. This means that at the end of their active life of 30 years, there will be over 1700 tonnes of spent fuel at Koodamkulam. A serious damage to the reactor structures due to flood and cyclone will lead to a radiological emergency of much greater impact than Chernobyl. If the incidence occurs when the reactors are on-line, the Chernobyl history will be repeated. The intense pollution of the marine ecosystem will be an additional feature.

The climatic catastrophe is equally applicable to other projects involving hazardous products. Nuclear plants stands out as a distinct class, because of the lethality and long life of the radionuclides involved. All construction work at the coastal stations has to be frozen until the ultimate safety of the structures is ensured. In the case of existing installations, detailed independent studies of the possible hazards need be undertaken. Preventive and ameliorative steps like bunding and afforestation are also to be considered.

Padmanabhan VI
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Koodankulam Safety Issues

Don't Rush in Where Others Fear to Tread

Dear Prime Minister,

INSAF and Vikas Adhyayan Kendra would first of all like to congratulate your government on your reported willingness to sign the CTBT. Signature of the CTBT will send an important signal to the world that India will avoid a costly and destabilising arms • race in the subcontinent whose final result could only be mutual destruction. In expressing itself as willing to sign this treaty, India has shown that it is responsible, and wishes to avoid the unthinkable.

INSAF is writing to you with the utmost respect, to express our concern over some aspects of the safety of the nuclear power plant project at Koodankulam.

The NPC has reassured us repeatedly that the design of plant chosen is 'completely safe'. According to Mr. S. K. Jain, chief engineer of the Koodankulam project, the Russian reactors are 'extremely safe' and have 'many significant safety enhancement features'.

According to a document given out by the NPC in Nagercoil. 'The design features for the proposed Koodankulam plants have been extensively negotiated. These include: ? The reactor shall meet all regulatory requirements of India and its designs have to be licensed by our independent regulatory body. ? The plant shall be capable of operating with high performance, reliably, and safely within Indian grid condition. ? It should have the latest design features and meet the latest international safety requirements.

It may indeed be the case that the VVER-1000/392 reactor design that has been chosen has some advantages over some western- style reactors, and it is indeed true that the VVER type reactor is not the same as the Chernobyl type RBMK design.

However, it is also the case that the WER-1000 reactor design in general has quite specific safety problems which Mr. Jain's reassurances do nothing to clear up, while the specific variant of the VVER 1000
design that has been chosen, the WER1000/392 design, will be the first of its type anywhere in the world.

This means that India will be building two of a completely untried reactor design.

The VVER-1000/392 reactor design is based on the VVER-1000/320 reactor design, which has many operating reactors in Russia and Eastern Europe. A variety of problems have arisen with attempts to complete and upgrade these reactors to so-called 'western' nuclear safety standards. While the commitment by the NPC to the latest international design standards is laudable, NPC makes no reference to the problems with the VVER320 model which have been indicated in IAEA documentation, especially with reference to the R4K2 plants.

These problems are set out by the International Atomic Energy Agency in a publication known as the 'Issues Book'. According to the Issues Book, these problems are the following:

The possibility that the steel reactor pressure vessel may become brittle, due to the effect of neutron bombardment of the steel. This would make it possible for the vessel to crack open violently during an emergency. This would probably (according to safety analyses by the US-DOE) propel the head of the pressure vessel out through the containment roof, causing a major radioecological catastrophe. The government, when the detailed project report is done, needs to ask very detailed and searching questions about steel composition, neutron flux, and RPV integrity.

The possibility that control rods may fail to insert properly during an emergency. This has already occurred at a number of VVER-1000 plants in Russia and Eastern Europe, as well as in French PWR plants. In many plants in France, costly replacement of the entire control rod mechanism has had to take place. Failure of the control rods to insert during an emergency is a serious failure, akin to having no brakes on a car.

The possibility that small tubes in the plants steam-generators may fail, leading to uncontrollable leakage of very highly pressurised and radioactive primary coolant into the low-pressure secondary system. This can lead to a loss of coolant accident with subsequent core meltdown if il is large, as well as causing damage to other parts of the plant.

• Problems with instrumentation and control systems and with properly integrating Western (presumably Siemens) control systems and Russian components, which have proven very difficult at the Temelin plant in Czech Republic.

- Problems with the detailed plant layout that have resulted in there being a particular spot in the plant where main steam-lines cross with important emergency systems. A main steam-line break such as might be caused by a big primary to secondary leak, can here result in the main steam line rupturing, and in turn destroying other essential safety systems. It is essential that when the DPR for Koodankulam is done that this issue of design be tackled.

I have outlined a series of specific issues that pertain to WER-1000 safety. It does not follow from this that only WER-1000 reactors or even only Russian reactors have these kinds of safety problems. These are in many cases problems that have been recognised for many years in Western (US, French and German) reactor designs also. It is simply the case that safety issues of one sort or another are inherent in ALL nuclear technology, and all reactor designs.

Nonetheless, it is worth asking why: (a) The VVER-440 reactor design, which in Finland and Hungary, has performed far more reliably than has the VVER-1000 and whose steam- generators in particular have operated much belter, was not chosen over the VVER-1000 design which has always had problems, (b) Why the Russian design for an 'inherently safe' reactor, the VPBER-650 design was not chosen.

Both these designs would have had much better operating and safety characteristics that the VVER-1000 design chosen, and the VVER-440 design was for some time under serious consideration by India.

Many of the specific design and safely issues involved are issues, which must be tackled during the process of detailed design and safely review. Presumably they will be tackled during the detailed project report.

It is therefore critical that the detailed project report be a public document, and that it be subjected to a process of formal public review,

Finally, the question must be posed as to whether any nuclear reactor development of this kind is in the interests of the Indian people. Analysis after analysis has shown that this type of development creates no benefits whatsoever for the poorer classes, and that it is also neither the way to prevent the greenhouse problem nor the way to provide energy: even electrical onergy. Nuclear power, whether from Russia, the US. France. Germany or Japan, or India, is quite simply the most dangerous and expensive way to produce electrical power that has ever been devised.

INSAF is concerned that expenditure of the colossal sum of $3billion US. on two 1000Mw nuclear plants is an entirely inappropriate expenditure. INSAF believes that nuclear power in is not an appropriate solution to the energy problems of either Tamil Nadu in particular nor of India in general. We have deep reservations concerning the whole emphasis, which is being given both to Koodankulam and to the entire nuclear program in this country, and are convinced that far from solving our energy problems it will worsen them and divert resources that could be used in more socially useful ways.

We call on you to take most seriously the safety problems mentioned above. Please conduct a public review of the entire project with a view to determining whether or not it is truly in the interests of the people of India.

Finally we call on you to cancel the entire project forthwith if the above cannot be done, and if the safety problems associated with the project cannot be solved within a reasonable cost envelope.

WW
Vikas Adhvayan Kendniu

Fighting the powers...

continued from page 9

It is true that the southern districts of Tamil Nadu are industrially backward and they could use some economic boost But what arc the concerned people's interests" Do they want to industrialise at the cost of traditional agriculture? Arc they interested in a modern 'big bang' solution for the intractable problem of underdevelopment? There is a troubling silence on these issues.

In the final analysis, this unorganised fight against the nuclear power project in Koodankulam is by no means a powerful fight. Atleast not yet!

S. P Udayakumar who works as a Research Associate and Co-Director of Programs at the Institute on Race and Poverty, University of Minnesota, founded the 'Group for Peaceful Indian Ocean in I988 which sought to educate the public opinion against, among other issues, nuclear weapons and power. Udayakumar is from Nagercoil and visits his family often. He can be contacted through email (spkumar@to.umn.edu)

The following are some of the letters

Dear Prime Minister, Please listen to Our Pleas

sent by people who love India and do not want it going down the nuclear hole. They were sent before the fall of the government.

Smedsby, Finland March 12th 1999

As a friend of Indian music and culture since my teens I am asking for your attention about something I find very important:

I have read that there are plans on building two new nuclear power plants in the south of India, next to the holy spot of Kanyakumari using VVER 1000/392 technology.

Regardless of the type of reactor you plan to use (and I understand that the VVER1000/392 has proved problematic for instance at Temelin and R4K2), I would like to point out that all nuclear power plants are dependent on technology that endangers the health of those who live not only near it, but both people and other living things around the uranium mines and other facilities necessary for producing nuclear fuel.

I feel the 3 billion US Dollars planned for this a project could be much better spent.

I would suggest using the money for environmentally clean projects instead, since there are poisonous and radioactive emissions not only from the power plants but also from the uranium mines. Also I understand there are unresolved safety issues with VVER1000 technology.

In Finland, where I come from (and also Nokia Mobile Phones!) there is a strong opposition against nuclear power, and indeed there has also been a government decision not to build any more nuclear power plants in Finland (we already have four reactors).

Sweden, the home of Volvo, Ericsson, SAS airlines etc., (and where I too lived 1979-91) also has had a government decision not to build any more nuclear power plants, but instead stop using the ones they have now.

Nuclear power has also proved so economically infeasible that there hasn't been a new nuclear power plant planned in the USA (where I suppose they are quite aware of what will and what will not generate money!) since 1974. Instead they have cancelled over 130 planned nuclear power plants, some of whose construction already had begun!

I suppose they would build more of them if it was economical? Thanks for taking your time to consider my points of view,

Yours sincerely,

St Sni Steinbock.
Sound Effects Master,
City Theatre of Vasa, Finland 65610
KORSHOLM FINLAND

stanibok@freenet.hut.fi

March 16, 1999

Dear Sir,

I love India and Indian people, visited India several times and even published the book "20 000 kilometres around India" (1968). And I am strongly against Nuclear Power Plant's constructions in your great and wonderful country

Troubled Russian nuclear industry are trying to survive through construction of the Nuclear Power Plants in India and China.

I can understand willing of India to have nuclear weapons for national safety reasons, but I can't understand Indian willing to have nuclear electricity. Chernobyl and Three Mail Islands nuclear catastrophes demonstrated how it can dangerous all modern nuclear electric technologies!

You are personally, not Russian-Minatom greedy engineers will be damned Indian people after inevitable nuclear catastrophe and radioactive pollution in Koodankulam or Kanyakumari.

One important reason why USA stopped in 70's to construct their NPPs was detailed calculations of the consequences and clear understanding that NPPs there are ideal weapons for enemies or terrorists. If India don't have unfriendly neighbours or if you do not have terrorists?

Prices for solar and wind electricity now lower that for Nuclear one. All coastal Indian territories have enormous potencies for the wave's energy.

And the last, but not the least, argument : we know that it is Russian government's credit, what give Minatom money for Indian NPPs construction. Now in Russia grouting protest against these credits, and it quite possible that it will be cancelled in nearest future.

1 pray to you, Sir, think out all these arguments and stop the development of Nuclear Power Plants in India.

Professor Alexey Yablokov
Author of the book "Nuclear Mythology" (1995,1997) Co-Chair, Program for Nuclear and Radioactive Safety of the International Socio-Ecological Union

Letterbox

Greetings! I am a Research Associate and Co-Director of Programs at the Institute on Race and Poverty, University of Minnesota, Minneapolis, US. I am writing to share with you my interest in the scrapping of the Koodankulam nuclear power project. In 1988 my friends and I founded the 'Group for Peaceful Indian Ocean' (GPIO) at Nagercoil and sought to educate the public opinion against, among other issues, nuclear weapons and power. The group became defunct when I came to the US in 1989 for higher studies. With the collapse of the Soviet Union, we did not think much about Koodankulam.

In June 1998 I wrote an article on the dangers that the Koodankulam project poses to the people of Kanyakumari district, and appealed to the President of India, the Chief Ministers of Tamil Nadu and Kerala, some of the Kanyakumari district legislators, and the local newspapers against the project. Quite expectedly, none of them had any time even to acknowledge the receipt of the letter. In the meantime, the National Alliance of Peoples' Movements (NAPM) and the International Physicians for the Prevention of Nuclear War (IPPNW) in Germany endorsed my call to scrap the Koodankulam project. Several individuals from various parts of India also expressed interest in the campaign against Koodankulam.

On January 9,1999 my parents (who live in Nagercoil), Aravinda, Ravi, and Krishna of Association for India's Development (AID), and I visited the Koodankulam project site and talked to many local people. On January 11, 1999 John Hallam and Mishka of Friennds of the Earth, Australia, visited Nagercoil. We all met with some local leaders who are interested in the Koodankulam issue. I left Nagercoil for Minneapolis on January 13th, and met Mr. N. Dennis, Member of Parliament from Nagercoil, by chance in Chennai, and told him the need to stop the Koodankulam project Mr. Dennis asked me to send him more details. I have recently been invited by The Hindu to write a short piece on the local peoples' movements against the Koodankulam project

In the meantime. John and Mishka have offered some three workshops on the risks of VVER reactors at Madurai. Tirunelveli and Nagercoil with the help of NAPM workers. Here is what John has written to me about the workshops: "Just a quick note to say that I held a workshop yesterday here in Madurai with Gabriella on VVER 1000 safety. Overall I would say it was pretty successful, though it may have been a bit detailed for some. It would have been ideal to take it more slowly. However, there was certainly plenty of interest in the topic! Roughly 25 people were there. While there we talked strategy a bit. Nothing canhshaking was decided, except that there should be an attempt to take the issue into the parliamentary and electoral arena, and that there should be a sustained technical attack on the project- which is best done by you, Surcndra, and myself. I (lagged the possibility that the two of us may try to get an international campaign based on the technical aspect going, as we discussed. I am certainly eager to do so. I'll be doing two further workshops in Tirunelveli on Feb 6th and Nagercoil on 7th (arranged by Sister Alfie)"

Here arc some ideas that cross my mind about popularizing and intensifying the Koodankulam struggle:

[1] Bringing together all those who are interested in this issue is, of course, the logical first step. We need to have local people in Kanyakumari, Tirunelveli, Thoothukudi, and other adjacent districts in Tamil Nadu, people in southern Kerala, and people in other parts of India.

(2) We can put together a mailing list and start circulating an informal short newsletter (both hardcopy and electronic copy) with some basic information on the project, latest developments, debates etc.

[3] We should ask people for ideas, suggestions and alternatives. We could have this debate for a few months and ask people to organize in their own respective areas.

[4] Then we may collectively come up with a consolidated protest movement. a concrete action plan, specific steps to take and so forth

[5] Some of us could initiate an international campaign based on the technical aspects of the VVER reactors

[6] Our primary objective should he having the project scrapped for good and forever.

[7] Only if we fail to kick the project out of Koodankulam completely, do we turn to compromises. negotiations on safety measures, peoples' participation in this and other crucial areas, job opportunity for the local people, etc But that is NOT the objective we begin the struggle with

Please do share with me your thoughts and ideas, and I would be happy to circulate them among us all and facililate further discussions. Also please tend me the addresses (and email addresses) of yourself and people who may be interested in this issue. Time is running out for us

Looking forward to hearing from you. 1 send you my best personal regards and all peaceful wishes.

P. S. The July 1997 issue of Facts. Against Myths, the monthly newsletter of Vikas Adhyayan Kendra (VAK, D. I Shivdham. 62 Link Road. Malad West, Mumbai 400064. India) has so much invaluable information on nuclear power. Please contact VAK at 882-2850,889-8662 (Phones). 889-8941 (Fax), or vak@bom3, vsnl net.in (email) for a copy of for subscription details.

S. P. Udayakumar, Ph. D.
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I am growing a little impatient about Koodankulam. But there is still lot of time I think. Because Roderigues (Kalpakam station director) has said that the construction work will start only a year later.

If we want to fight against this project, we have to get out of this local situation. 2000 MW of nuclear electricity in Tirunelveli is just not a local problem. At least, this has to be thought as a regional problem affecting T Nadu, Kerala and Srilanka. In my opinion the centre of the campaign should be Chennai. And to wake up people in Chennai, we have to inform them what a normally functioning nuclear reactor in Kalpakkam means for the people living in Madras. Secondly, besides Koodankulam, there is a 500 MW mwe fast breeder which is coming up in Kalpakkam. From a safety angle, this one is more serious than V VER 1000.

We have to do the following : Do some measurement of radionuclides in fish and other food items. We cannot afford to do it on payment. We will have to look for friends in laboratories abroad.

Conduct a health study in villages around MAPP. Part of the work can be done on a voluntary basis by Chennai based doctors. The primary investigators (women from the same villages) will have to paid. These persons can, later on, work in the campaign, if a local group takes up the initiative.

Study, the civil liberty violations by MAPP. Police firing and death of a fisherman who was caught fishing near the plant, midnight ransacking of a village, situation of the fishermen evacuated from the present site etc are themes to be included.

Do a video film incorporating the findings of the study. For this, we have the camera, and also the cameraman.

After this, we could hold a national seminar in Madras, inviting experts from NPC as well. Besides the above issues, we should also be asking the NPC about the measures they are going to adopt in the event of sea level rise and other problems which will come up in future.

While 10 years ago, we had the mainstream Tamil media with us. Today, almost all of them publishing pro-nuclear articles and news. Since the movement is not picking up, we should think of moving our self. One suggestion is personal meetings with writers and other prominent persons at district level. This can be done by young people, who are now on vacation. If you can locate a few such volunteers, they can undergo a short course at Vedchi and then set sail to all district headquarters. From my side, I am ready to do it in Kanyakumari, where my Tamil will work.

Padmanabhan VT
<padmaalu@hotmail. com>

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The Imperiled Paradise

For more than 50 years, India and Pakistan have been arguing and periodically coming to blows over one of the most beautiful places in the world.. The Mughal emperors thought Kashmir as paradise on earth. As a result of this unending quarrel. Paradise has been partitioned, impoverished and made violent. Murder and terrorism now stalk the valleys and mountains of a land once so famous for its peacefulness that outsiders made jokes about the Kashmiris' supposed lack of fighting spirit. I have a particular interest in the Kashmir issue because I am more than half Kashmiri myself, because I have loved the place all my life and because I have spent much of that life listening to successive Indian and Pakistani governments, all of them more or less venal and corrupt, mouthing the self-serving hypocrisies of power while ordinary Kashmiris suffered the consequences of their posturings.

Pity those ordinary, peaceable people, -aught between the rock of India and the hard place that Pakistan has always been!

And, as the world's newest nuclear powers square off yet again, their new weapons making their dialogue of the deaf more dangerous than ever before, I say, A plague on both their houses. "Kashmir for the Kashmiris" is an old slogan, but the only one that expresses how the subjects of this dispute have always felt; how, I believe, the majority of them would still say they (eel, if they were free to speak their minds without fear.

India has badly mishandled the Kashmir case from the beginning. Back in 1947 the state's Hindu maharaja "opted" for India, and in spite of United Nations resolutions supporting the largely Muslim population's right to a plebiscite. India's leaders have always relected the idea, repeating over and over that Kashmir is "an integral part" of India. (The Nehru-Gandhi dynasty is itself of Kashmiri origin.)

India has maintained a large standing military presence in Kashmir for decades, both in the Vale of Kashmir where most of the population is based and in mountain fastnesses like the site of the present flashpoint This force feels to most Kashmiris like an occupying army and is greatly resented.

Yet until recently the generality of Indians, even the liberal intelligentsia, refused to face up to the reality of Kashmiris' growing animosity toward them. As a result, the problem has grown steadily worse, greatly exacerbated by laws that threatened long jail sentences for any Kashmiri making anti Indian statements in public.

Pakistan, for its part, has from its earliest times been a heavily militarised state, dominated by the army even when under notional civilian rule and spending a huge part of its budget — at its peak, around half the total budgetary expenditure—on its armed forces Such spending, and the consequent might of the generals, depends on having a dangerous enemy to defend against and a "hot" cause to pursue.

It has therefore always been in the in terest of Pakistan's top brass to frustrate peace making initiatives toward India and to keep the Kashmir dispute alive Thus, and not the alleged interests of Kashmiris, is what lies be hind Pakistan's policy on the issue.

These days, in addition, the Pakistani authorities are under pressure from then country's mullahs and radical Islamists, who that acterise the stiuggle to "liberate" (that is. to seize) Kashmir as a holy was. But Kashmiri Islam has always been of the mild, Sufistic variety, in which local pirs. holy men. are revered as saints. This open hearted, tolerant Islam is anathema to the firebrands of Pakistan and might well, under Pakistani rule, be at risk

Thus, the present-day growth of terrorism in Kashmir has roots in India's treatment of Kashmiris, but it has equally deep roots in Pakistan's interest in subversion. Yes. Kashmiris fact strongly about the Indian "occupation" of their land; but it is also almost certainly true that Pakistan's army and intelligence service have been training, aiding and abetting the men of violence

The fact that India and Pakistan possess nuclear weapons makes urgent the need to move beyond the deadlock and the

moribund 50-year-old language of the crisis. What Kashmiris want, and what India and Pakistan must be persuaded to offer them, is a reunited land, an end to Lines of Control and warfare on high Himalayan glaciers. What they want is to be given a large degree of autonomy; to be allowed to run their own lives.

The Kashmir dispute has already exposed the frailly of the cold war theory of nuclear deterrence, according to which the extreme danger of nuclear arsenals should deter those who possess them from embarking even on a conventional war. That thesis now seems untenable. It was probably not deterrence that prevented the cold war from turning hot, but luck.

So here we are in a newly dangerous world, in which nuclear powers actually are going to war. In such a time, it is essential that the special-case status of Kashmir be recognised and used as the basis of the way forward. The Kashmir problem must be defused once and for all, or else, in the unthinkable worst-case scenario, it may end in the nuclear destruction of Paradise itself, and of much else besides.

Salman Rushdie
The New York Times June 3, 1999

From The

The Broader Question

We maintain and hold that Muslims and Hindus are two major nations by any definition or test of a nation. Muslims are a separate nation by virtue of their distinctive culture and civilisation, language and literature, art and architecture, names and nomenclature, sense of values and proportion, legal laws and moral codes, customs and calendar, history and tradition, and, therefore they are entitled to a separate, sovereign existence in a home-land of their own,

M.A.Jinnah

I find no parallel in history for a body of converts and their descendants claiming to be a nation apart from the parent stock. If India was one nation before the advent of Islam, it must remain one in spite of the change of faith of a very large number of her children... You seem to have introduced a new test of nationhood. If I accept it, I would have to subscribe to many more claims and face an insoluble problem.

M.K.Gandhi

The conflict in Kashmir arises from the fundamental difference in these two viewpoints which despite the creation of Pakistan, has not been resolved till now. India is not a 'homeland* for Hindus alone and cannot survive as a nation of diverse cultural and linguistic units if it "gives away" Kashmir and no government in Pakistan can survive if it publicly stops trying to change the status quo. Are we then condemned to go on and on killing our finest youth time and again?

There arc some who feel that one can impose a "final solution" by not keeping in the shelf the greatest achievement of their respective 'scientists'. These people certainly deserve wide exposure. Unless the threat of total destruction that they convey becomes widely appreciated, these ideas will not of themselves die a natural death.

Even some otherwise sensible people have felt that one cannot have friendship with a rogue country that has waged a relentless war of terror within our borders over the past twenty years. The notion of "rogue" countries is a post Reagan US invention that needs to be thrown into the dustbin. There are no rogue countries: there are rogues within every country and quite often they hold power within governments. It is necessary for men of goodwill to relentlessly work to disempower these rogues within their own spheres and help other likeminded people in other countries to do the same. Working for peace is not merely a peacetime activity. It becomes even more relevant during times of strife when war-profiteering rogues have a field day.

Even before the war in Kargil began, activists walking in the Global Peace March from Pokran to Sarnath were abused and attacked with stones for having the temerity to talk of peace. Later there were requests from some that the march be postponed till after the elections, since with the hostilities in Kargil, it had become irrelevant-a dishonour to our brave dead. There is no doubt that those who have made the supreme sacrifice deserve the highest honour. But honouring their bravery and valour, does not mean that one support a state of affairs where such sacrifices are a periodic necessity. The finest tribute one can pay to these young men is to ensure the establishment of genuine peace.

Surendra Gadekar

HEADS THEY WIN, TAILS WE ALL LOSE

M. *V. Ramana*

For the first time since the 1971 war, Indian airplanes have been involved in combat Both armies started exercises near the border and the navies were on high alert Of special concern, however, is the fact that this escalation has happened soon after India and Pakistan have taken major steps towards developing a nuclear arsenal.

But in the middle of this crisis there have been statements that because both countries possess nuclear weapons the conflict will not escalate. While one has to be thankful if this does hold true, nuclear weapons do not provide any basis for such confidence. Such statements are no-lose propositions. If the war docs not escalate, then the pro-nuclear advocates can claim credit for having advocated nuclear weapons. If the war does escalate, they can claim that it is the lack of full-fledged nuclear capabilities. Depending on who you ask, what is required to prevent war could be a "minimum deterrent', a 'second-strike capability' or a triad. It does not matter how exactly these terms are defined because they keep changing continually. And, despite having nuclear weapons, if the war really becomes a full-scale one, then, of course, we are all losers. It does not matter that the pro-nuclear advocates were wrong at that point.

This notion that nuclear weapons prevent war, usually termed nuclear deterrence, has several inherent problems. Rather than anything physical, nuclear deterrence is just a psychological mind game. The idea is to ensure that one's nuclear and military might always intimidates the opponent. To keep the opponent in that state, every now and then one has to flex one's muscles. At such points, things can easily go wrong. In the current context, there are four points that are relevant.

First, the recent escalation in Kashmir is in itself a failure of nuclear deterrence. If nuclear deterrence were to hold in the way it is supposed to, then the two countries should never have gone to war. Even if one were to excuse the recent events as not quite a war, it does point to the fact that the leadership is willing and does take their people to the brink of the nuclear abyss.

Second, a careful look at the US-Sovlet experience, far from showing that nuclear weapons prevented war, showed that the two were willing to fight numerous proxy wars, especially in the third world. Over the decades they showed their willingness to fight it out to the last Vietnamese, the last Afghan and the last Angolan. India and Pakistan seem to be willing to do the same With the Kashmiris.

Third, as Kanti Bajpai points out, even the success of deterrence is actually "a colossal failure of the political imagination." If deterrence is successful, and remember that this is a big IF, then there is no incentive to work out problems with the "adversary." And, by freezing problems, nuclear weapons only entrench those on both sides who have an interest *in* permanent enmity. There are then no possibilities for normalisation and building friendships, the only way to have lasting peace. 11K people of India and Pakistan have, of course, no innate predisposition to hate and are quite capable of friendship. Hostility and mistrust is only a result of deliberate propaganda by groups and parties that thrive on hatred Among the citizens of the two countries, by and large, there is genuine affection, or at least curiosity, about the citizens of the other country. This is proved by the fact the Pakistan India People's Forum for Peace and Democracy, a group of independent citizens, meets every year, (spending their own money) and have reached consensus on supposedly contentious issues like Kashmir, nuclear weapons and religious fundamentalism.

Fourth, one cannot conclude that nuclear weapons keep the peace from the evidence so far. This is best illustrated by the old anecdote about a person falling off a tall, hundred-floor building. As he passed the 50th floor, another person asked him how he was doing. His reply was "Fine, so far." In the same way as this person would be crashing into the ground in a few seconds, the fact that nuclear war has not broken out so tar does not mean that it is not likely to do so in the future,

What then are the implications of the continuing clash in Kargil and what should be done? The obvious answer is that India and Pakistan should stop the war and normalise relationships between themselves In particular, it is vital that the Kashmir problem be solved And any solution of the problem should involve the people *of* Kashmir As in the ease *of* the Pakistan-India People's Forum, different people's groups have proven more capable than the governments in establishing the basis for friendly relations. Around the time of the Hague Peace Conference last month, a large number of Kashmiris, from Pannun Kashmir to pro-Mujahidccn, groups met for the first tune. They called for an end to all violence. for free dialogue between Kashmirs, and return to Kashmir's traditions of peaceful co-existence. It is lor the governments to help full-fill these dreams.

However, solving the Kashmir problem alone will not nd us of the nuclear dangers that confront South Asia. Witness the case of the US and Russia, where thousands of nuclear weapons are still waiting to be launched at each other within a matter of minutes despite the end of the cold war and the collapse of the Soviet Union over a decade ago. Like wise. India and Pakistan may well persist in holding *on* to their nuclear arsenals even after the Kashmir problem. And, then it would just be a matter of waning for the next crisis before these weapons are unsheathed and used.

Dr M. V Ranuna is a post doctoral fellow working at the Centre for Energy and Environmental Studies, Princeton University

December 1998/ January 1999

Law Rather Than War On Kashmir

Dr Zia Mian

The long running low intensity conflict in Kashmir was bound to escalate. It was only a matter of time. At one level, the current fighting is simply another bloody interlude in a fifty year pattern of India and Pakistan alternately negotiating and fighting over Kashmir. However, things are made more dangerous by both states now having nuclear weapons and policy makers sharing a reckless strategic presumption that their respective nuclear shield protects them from the outbreak of real war or the possibility of defeat.

Kashmir is a symptom of a deeper underlying problem, as everyone knows. Think of the periodic chills and fever that are associated with malaria. More to the point, the disease is serious and given to chronically recurring. So far at least, the fatal complications common to untreated malaria have not set in. But this is not the occasion to dwell on this infectious disease as a model for nationalism, nor to try identifying the human analogues of the mosquitoes who bear this disease from one place to another and across generations, or the parasites who feed of the body politic and are responsible for fever. The need now is to seek help.

The major problem facing any effort to break the impasse between India and Pakistan over Kashmir is that the two states disagree fundamentally on the terms for talking about the issue. Pakistan insists any discussion has to be based on the 1948 and 1949 UN resolutions on Kashmir; corning after the 1947 war, they envisaged the United Nations Commission for India and Pakistan supervising a settlement "in accordance with the will of the people" of the region. India claims primacy lies with the 1972 Simla Agreement; signed after the 1971 India-Pakistan war the treaty commits the two states to settle their disputes "through bilateral negotiations or by any other peaceful means mutually agreed upon between them" and makes no mention of the UN. Kashmiris are rarely consulted by either state or the international community.

These positions have stalled any effort at a settlement and in fact contribute to the resort to force. Fighting along the Line of Control allows Pakistan to ask for international mediation, For hard-liners here, the more severe the fighting the greater the incitement (they hope) for the international community to talk about Kashmir. Thus Pakistan fans the flames. This however creates pressure for Indian hard-liners to settle the issue directly by force of arms. No Pakistani support for Kashmiris, no problem.

There may be a way to break out of this potentially terminal dynamics. It requires intervention. But not necessarily intervention of the kind that Pakistan has traditionally aimed for, nor India traditionally refused. Rather than a single state or group of states riding to the rescue on Kashmir as if they already knew what the answer to the Kashmir dispute was and imposing it by force, the United Nations General Assembly could take a legal initiative. The General Assembly could choose to ask the International Court of Justice for an advisory opinion on the standing within international law of India and Pakistan's claims over Kashmir, the existing UN resolutions on Kashmir, bilateral treaties and agreements dealing with the dispute, and the right to self-determination of the Kashmiris.

The International Court of Justice (otherwise known as the World Court), based at The Hague in Holland, is the highest legal authority within the United Nations system, and thus within the international community. The UN Charter provides the General Assembly the right to ask the World Court for an "advisory opinion" on "any legal question." This "opinion" is not directly binding on the UN or its member states or even enforceable. It is however understood to be authoritative as a statement of the law. There is precedent for the United Nations General Assembly using it power to ask the World Court for such an "advisory opinion." Most recently the General Assembly asked the World Court whether the **threat or use of nuclear weapons** was permitted under international law. The World Court ruled in July 1996, declaring the threat or use of nuclear weapons to be generally illegal.

The bottom line is that the UN General Assembly simply has to pass a resolution asking the World Court for an "advisory opinion " It has to be said that the World Court can refuse a request, but only if there "compelling" reasons. It would be hard to see what "compelling" reasons may arise in the case of Kashmir.

This is not the place to consider what either India or Pakistan may do, what arguments they may put in front of the Court, or the justifications they may offer for refusing to speak to the Court, or even the possible eventual opinion of the Court. The point here is to offer a suggestion about a process. It offers no shortcut to a solution. The process would seek to clarify what could be a shared basis for the international community for a solution to Kashmir.

It could be argued that since the World Court would offer only an "advisory opinion" it would make no difference either to India or Pakistan. They could choose to ignore it, and the status quo would prevail. However it is the fact that the UN General Assembly would be taking the action that gives this proposal significance. For want of a better institution, it is the closest thing to a forum for expressing collective aspirations and understanding by the system of states. Once the General Assembly sets out to seek a legal basis for the international community to take a position on Kashmir the context within which India and Pakistan argue their case about Kashmir would change. India and Pakistan would have to decide whether they were prepared to defy the wish of the world community and by so doing jeopardise what international support presently they may have for their position.

Depending on the Court's judgement, India or Pakistan (or even both) may well find itself isolated on Kashmir. This would be a big blow that either would not be able to accept indefinitely, especially if the international community kept insisting that the Court's judgement be used to take some action. The Court's

judgement on the general illegality of nuclear weapons has been the basis for nuclears manding disarmanent that now contect some 130-150 supporters in the General Assembly, increasingly' isolating the nuclear weapons states. If this should start to happen on Kashmir, it would be hard if not impossible for India, or Pakistan, (or both, depending on how the Court decides) could remain defiant for very long. They would be taking on the whole international community backed up by international law.

Using the opinion of the Court, whatever it happens to be, the international community could make it clear to both India and Pakistan that there existed a new legal basis for a legitimate solution to the Kashmir dispute and they would have to work within it if they expected any support from the rest of the world. At the same time, a solution based on an independent interpretation of international law could help politicians in South Asia • if they wanted it to. For the first time there would be an alternative to the long held positions that could be argued to be even more legitimate. Leaders in India and Pakistan would have the opportunity to modify their positions and justify this to their constituencies on the grounds the World Court decision left no alternative. In this, for once, they would be right. There should be no alternative to resolving international disputes except through law.

From: The News on Sunday (Pakistan),
June 13. 1999

ANUMUKIT? No Way,
Neither is it ANUSHAKTI
It is and remains

ANUMUKTI

There has been a lot of confusion reganting our name. So much so that even we blundered and called ourselves Anumukit on the banner in the last issue. But no one noticed That shows the
amount of familiarity our name has achieved Hopefully it hasn't bred contempt.

LETTERBOX

The editorial appearing in the RSS mouthpiece "Panchajunya" (June 20). makes alarming reading. It raises serious questions about In dia's security. The editorial openly advocates dropping of nuclear bombs over Pakistan, as a solution to long standing Pakistani hostility. It also asks in a rhetorical fashion as to why India carried out tests of nuclear weapons in it
was not meant to be used. It calls upon Prime Minister Atal Bihari Vajpeyee to he the man of destiny by dropping nuclear bombs on Pakistan and to go down in history as the man who brought about the "final solution"

The total unconcern regarding destruetion of human life on a massive seule displayed in the editonal is not just appalling but extremely treightening as well, It shows abject moral bankruptcy and reveals a mindset which, it given opportunity, would think nothing of erecting concentration camps and gas chambers.to "solve cultural and civilisational" problems.

This view is equally disturbing even from a purely tactical point of view The evboration reveals an abysmal ignotance about the apocalyptic nature of nuclear explosions Not only that, the editornal also shows criminal disregard of the fact that such insane outeries would radically increase the possibility of a pre-emptive nuclear strike more so, given the fact that there is no dearth of lunatic and cowardly elements within the Pakistani ruling establishment as well.

In ordinary times, one would dismiss these views as intolerant outpourings of men tally deranged men and ignore them. But in the present contest to do so will he suicidal as the RSS happens to be the de- facto extra-con-
stutional centre of power in India, In view of the above, the nation has a right to know from the Prime Minister Mr. Vajpayee a self-confessed RSS man. as to what is his stand on the use of nuclear weapons. In fact. Mr Vajpayee, must forthwith openly *and* categorically dissociate himself from the RSS view in clear and unequivocal terms Failing this, the President shall secure his removal from the office of the Prime Minister, because the country is not safe even for a moment in the hands of a man who holds such views on nuclear weapons

Dr. Smita Puniyana
IIT Bombay

A Call For Sanity and Amity

The Indian and Pakistani forces have for many years, exchanged fire along the Line of Control in Kashmir. The ongoing Border War in the Kargil Sector of Jammu and Kashmir has been a matter of grave concern, as this may well lead to an all-out war, with disastrous consequences for the peoples of both nations As both countries have now become nuclear weapons capable,' there is serious risk of these weapons being used, by accident or design thereby adding an unimaginable new and hotrifying dimension to this entire conflict

The current violation of the LOC by the Mujahideens/infilirators, assisted by Pakistani Armed Forces, has led to this unfortunate situ ation. However the root cause for these recurrent violations lies in the non resolution of the long standing Kashmir question ' Despite being signatories to both the Simla Agreement and the recent Lahore Declaration, which specifically highlights the resolution of all disputes by peaceful means and negotiation, we find ourselves locked in yet another round of hostilities.

Before things get out of hand, we would like to impress upon the political leadership in both our countries the urgent need to cease all military activities, and to take steps to restore peace and stability in the region This, we beItevc, can only be achieved by resorting to negouations in the spirit of the Simla Agreement and the Lahore Declaration, to arrive al a per manent and acceptable political resolution of the dispute.

Admiral L Ranulas
Chairperson India Chapter
Pakistan-India Peoples Forum
far Peace and Democracy
June 18, 1999

The Nuclear Danger Is No Fantasy

Praful Bidwai

owever one looks at its genesis and its remarkably inept han dling by New Delhi, the Kargil crisis highlights, as nothing else, the sub-continent's strategic-volatility and the fragility of the Lahore proc-ess. If the Indian army had to wait till May 6 to be informed of the unprecedented large-scale intrusion by a shepherd, and then took six days to report this to the defence ministry, and if the ministry two days later still said the infiltrators only occupied "remote and unheld areas", then there is something deeply wrong with our security decision-making. The sud-den switch from smugness and inaction to high-profile air strikes with their high-risk es-calation potential testifies to the same flaws. One year after Pokaran-II, these put a huge question-mark over nuclearisation's claimed gains. The Bomb has comprehensively failed to raise India's stature, strengthen our claim to a Security Council scat, expand the room for independent policy-making, or enhance our security.

India stands morally and politically di-minished: a semi-pariah state to be equated with Pakistan, and periodically reminded of Security Council Resolution 1172. Most Third World countries see India as contradictory: a nation that for 50 years rightly criticised the hypocrisy of the Nuclear Club, only to join it; a country that cannot adequately feed its peo-ple, but has hegemonic global ambitions. Our neighbours, crucial to our security, see us as an aggressive, discontented state that violated its own long- standing doctrines without a se-curity rationale.

After prolonged talks with the U.S., in which we put our "non- negotiable" security up for discussion, India remains a minor, both-ersome, factor in Washington's game-plan as a non-nuclear weapons-state. South Asia's nuclearisation has enabled Washington to grant Pakistan what Islamabad has always craved, and which New Delhi has always denied it, viz parity with India. Today, India and Paki-stan act like America's junior partners. Wash-ington last August drafted both to smash the unity of the Non-Aligned in the Conference on Disarmament on linking PMCT talks with the five NWSs agreeing to discuss nuclear dis-armament. If nuclearisation had enhanced our capacity for independent action, we would not

Security based on deterrence is nothing but hope masquerading as strategy!

have been mealy-mouthed on the U.S. bomb-ing of Sudan and Iraq nor capitulated to un-reasonable U.S. demands on patents. Nuclearisation has put India on the defensive in SAARC and ASEAN, in NAM and the World Bank. Damage control remains the main preoccupation of our diplomacy one year af-ter the mythical "explosion of self-esteem". Worse, nuclearisation has drawn India into dangerous rivalry with Pakistan and China. India has eight times more fissile materia) than Pakistan. But in nuclear, more isn't better. The truth is, India has become for the first time vulnerable to nuclear attacks on a dozen cit-ies, which could kill millions, against which we are wholly defenceless.

By embracing the "abhorrent" doctrine of nuclear deterrence, we have committed what we ourselves used to describe as a "crime against humanity" This article of faith assumes that adversaries have symmetrical objectives and 'perceptions; they can inflict "unaccept-able" damage on each other; and will behave rationally, 100 per cent of the time. These as-sumptions are dangerously wrong. India-Pa-kistan history is replete with asymmetrical per-ceptions, strategic miscalculation, and diver-gent definitions of "unacceptable". For fanat-ics, even a few Hiroshimas are not "unaccept-able". Deterrence breaks down for a variety of reasons: misreading of moves, false alerts, panic, and technical failures. The U.S. and USSR spent over $900 billion (or three times our GDP) on sophisticated command and con-trol systems to prevent accidental, unintended or unauthorised use of nuclear weapons. But the Cold War witnessed over 10,000 near-misses. Each could have caused devastation. Gen. Lee Butler, who long headed the U.S. Strategic Command, says it was not deterrence, but "God's grace", that prevented disaster.

Generally disaster-prone India and Pa-kistan will have no reliable command and con-trol systems for years. Their deterrence is ram-shackle, if not ram-bharose. A nuclear disas-ter is substantially, qualitatively, more prob-able in South Asia than il ever was between the Cold War rivals. Kargil starkly highlights this. It would be suicidal for India and Paki-stan to deploy nuclear weapons and then "man-age" their rivalry. They must never manufac-ture, induct or deploy these weapons. India must not erase her own memory. For decades, she correctly argued that deterrence is illegal, irrational, strategically unworkable, unstable, and leads to an arms race. The "minimum de-terrent" proposition does not weaken this ar-gument's force. Minimality is variable and subjective, determined not unilaterally, but in relation to adversaries. Embracing deterrence means entering a bottomless pit. That is why the NWSs' "hard-nosed" realists ended up amassing overkill arsenals—enough to destroy the world 50 times. The danger that India could get drawn into an economically ruinous and strategically disastrous nuclear arms race, es-pecially with China, is very real.

Consider the larger truth. Nuclear weapons do not give security. Because of their awesome power, their use, even threat of use, is determined less by military, than by political, factors. That is why America cannot translate its enormous atomic prowess into real might Nuclear weapons have never won wars or decisively tilted military balances. Korea, Vietnam, Afghanistan, Falklands, the Balkans, all expose their a-strategic nature. They are not even effective instruments of blackmail. State after state, from tiny Cuba to China, has defied nuclear blackmail attempts. Nuclear weapons are false symbols of prestige. But they are ruinously expensive. To build and maintain a tiny arsenal, about a fifth of China's, will cost about Rs. 50,000 crores. This will further inflate our bloated military budget. Already, New Delhi spends twice as much on the military as on health, education and social security put together.

With Pokaran-II, and now Kargil, Kashmir stands internationalised. It is widely seen as a potential flashpoint for a nuclear confrontation. Largely symbolic events like Lahore, while welcome, do not alter the causes or conditions of Indo- Pakistan rivalry. The Lahore agreements do not even commit the two to slow down nuclear and missile development, only to inform each other of their tests. Such limited confidence-building can easily collapse, as Kargil vividly demonstrates.

Add to this debit side the enormous social costs of militarism, tub-thumping jingoism and male-supremacist nationalism; of further militarisation of our science; legitimisalion of insensate violence; and psychological insecurity among the young. The Pokaran balance-sheet looks a deep, alarming, red. But there is good news too: nuclear weapons aren't popular. According to recent polls, 73 per cent of Indians oppose making or using them. After November's "Pokaran- vs-Pyaaz" state elections, politicians know that nukes don't produce votes. And now, Kargil should induce sobriety. For sanity's sake, the nuclear genie should be put back into the bottle. What human agency can do, it can also undo.

The Times of India, June 2.1999

Doing Unto Others

K.P.S.Gill

In the emergencey and for some years after that as well, (I belong to the generation which can still remember the emergency!), Arun Shourie was one of my heroes. But read him now! The guy wants that we shouldvupply arms and encourage insurgency in Pakistan, Have we learnt nothing from the sorry episode *in Sri Lanka, Therefore it is a special pleasure to publish the following article from the most unlikely source. K.P.S. Gill is the person most closely connected with the police rule in the Punjab during the insurgency there.*

is tempting and there are some who now vociferously advocate that we do to Pakistan what they are doing to us. It would be easy to arm and instigate the growing armies of malcontents in Pakistan, pushing that nation into a spiral of violence and anarchy. The Punjabis dominate the armed forces and governance in Pakistan. The people of Sindh. Balochistan and NWFP are alienated. So are the Mohajirs. Even the minority Islamic sects like the Shias and the Ahmediyas have serious grievances. It would be easy to inject a spark of provocation into this incendiary mix of mutual animosities.

This is an option that India has consistently, and rightly, refused to exercise. The proof of the sagacity of this choice is available in Pakistan itself. Pakistan celebrates the destruction of Afganisthan through its strategy of Talibanisation as a great victory; but this is the beginning of its own eventual probable disintegration. As the ravaging armies of Islamic fundamentalism return to Pakistan, their attention may be temporarily diverted to Kashmir and India; but they will in time inevitably claim what they now regard as their own. In our age, when nations provoke and support campaigns of violence and terrorism in their own neighbourhood, they inevitably fall victim to the scrooge themselves. A victory for terrorism anywhere in the world today is a victory for terrorism everywhere

That is why the pursuit of peace if India's best, indeed only, option. And that is why. to a realist, the conflict in Kargil only reiterates the fact that, in a war between India and Pakistan, there never can be a victory, we must defeat the fundamentalist ideologies that threaten to plunge the entire region into a conflagration that may well destroy us alt. The greater war that we must now engage in is the war for minds.

All fundamentalist creeds preach an identical message of exclusion and hatred These malignant doctrines, and not Islam. motivate what the fanatics in Pakistan and their supporters elsewhere, call the jehad in Kashmir. The mullahs of Pakistan have reduced the teachings of one of the great religions of the world to a travesty, brainwashing young men many of them mere children - to commit mur der, and to die, in wayward wars of aggression on foreign soil. But this blasphemous treed of haired and slaughter offends against all religion. Indeed, if Pakistan seeks a righteous cause for jehad it would find it within its own borders - for Islam is far more secure in India today than it is there But such a jehad, must be conceived of in terms of an act of spiritual purification, not the intolerant and spiteful violence of the bigots who presently pervert the destiny of Pakistan through a falsification of their faith.

India has an immense advantage in the ideological war against extremism, the tolerance and diversity of its Constitutional creed But this creed must be translated into policies that will create a society less inequitable and far more humane than the one we have today. If we can achieve this, we will win votaries to this faith even among those who have, beyond our borders, been nurtured on a haired of the, very idea of India. And that would, indeed, be a great victory.

From: *The Times of India*

Plastic Patriotism in Wartime

Nivedita Menon

WTAR brings super-profits to arms-dealers. And to patriots. Overnight, individuals quick to seize the opportu nity have publicised their own names on hoardings in Delhi, urging our boys to die anonymous deaths in the icy wastes of Kargil — *dekhna hai zor kitna bazu-e-quatil mein hai,* they declaim. Kill a thousand, the enemy is warned, we have thousands more where these came from. Thousands of young men for whom the army means a livelihood, a way of looking after desperately poor families

Since April 13,1984, Indian and Pakistani troops have engaged with one other, eyeball to eyeball, for control of the 76-km long glacier. At Rs 3 crore per day, the Indian Army's expenditure for maintaining control over the icy heights, over 5557 days amounts to a whopping Rs 16,601 crore

When Field Marshal Sam Manekshaw made a public statement to this effect a couple of years ago, all his tested and proved patriotic valour was set at nought, and everyone, from retired army generals to politicians, was baying for his blood. Strip him of his titles was the mildest demand from men who were greater patriots than poor Sam could ever be. Greater patriots they, than the mother of the soldier killed at Kargil, who, dry-eyed, said to reporters when his body was brought home to his village in Kerala, "All the boys dying there are my sons, Indian and Pakistani. What is the use of this war?"

Of course our soldiers are patri-otic and self-sacrificing, They do it for the rest of us, who can prove our patriotism by putting up bill boards. Or by clicking on web sites. Or take the boys of Akhil Bharatiya Vidyarthi Parishad, who organised a function in Delhi University to give their blood for Bharat Mata. Solemnly they cut their thumbs and applied tilak to the cardboard forehead of a cardboard figure. Cardboard patriotism.

New Links

Do I care at all that young men are being killed in terrible ways out there in inhospitable, uninhabitable terrain? That the bland phrase hand-to-hand combat means intimate, terrifying face-to-face death? It is because we do care that hundreds of thousand of us protested at India's bomb in towns and cities all over the country, anonymous people, students and housewives, professionals and workers, academics and journalists. We protested because our patriotism lies in a longing for peace, for a world in which we do not have to send our young boys to kill and be killed, and because we knew that the bomb would destabilise the region and create a series of confrontations. We were derided by the strategic experts who said the bomb meant peace. They said having the bomb meant both parties would be more circumspect.

4t gives us no joy at all in being proved right. But we were. And I believe that we are rigty now, those of us who say that this particular episode cannot be seen in isolation that Kashmir is an issue which has to be resolved, and diplomatically, not by irresponsible warmongers flexing their muscles and sending other people's sons to their deaths. That it clearly cannot be handled bilaterally any more, but that we do not want the G-8 to come barging in. (How drearily unsurprising the very media which trumpeted its anti-imperialism in welcoming the bomb is bursting with pleasure and pride now that Uncle Sam has patted us on the head with his own bloodied hands)

Logic of Borders

The Kashmir issue is internationalised already. The question is do we now cave in to the world police? Or can we move towards forging new links in the Third World? Through Asian, particularly South Asian intervention, and through the mediation of world leaders of stature like Nelson Mandela, Fidel Castro, Yasser Arafat. Every day someone's son iskilled in Kargil. Does his death really mean nothing to us if the flag covering his body is their green and not our tricolour? But "they" tortured "our" men. That is truly horrifying, and the pain of the families unimaginable. But arc we still talking of war here? And of armies?

For wars are fought to win. If you don't win, you lose — there are no awards for fine sportsmen. The point of a war is that whoever is fought against is the enemy, whether it is another country or "anti-national elements" within our own. That precisely is the business of the army, to win by any means possible. If these things have never bothered you, why the sudden invocation of courtesy and codes of conduct? But there are many of us whom these things do and have bothered, and we have always protested the violation of human rights by the state. We simply don't see the logic of borders which must, be defended to the last citizen. For ours is the doubtless quirky belief that people are the nation, not borders, not big dams, not nuclear might. What is yours? Identical twin mushroom clouds over intact borders?

From Tunes of India
(The author was involved in the data collection during the survey of health effects at Rawatbhata nuclear power plant in 1991)

Real War is Against Hate and Anger

Rajani Bakshi

Violence we are told is sometimes necessary. Thus, killing (he intruders on our borders is not only justified, it is a heroic act. After all, they attacked us. There is valour in defending yourself with the able use of weapons.

While our soldiers do the actual killing, moreover, it is considered necessary for the rest of us to hate the 'enemies' vigourously, zealously cultivating and maintaining anger against them. Therefore, we have the phenomenon of fire-crackers being burst to 'celebrate' the defeat of Pakistani team in the World Cup final. There seems to be an almost vicious glee at that crushing defeat of our brothers turned neighbours turned enemies.

Still, let us pause to consider the Puranic tale about two great warriors who were locked in hand-to-hand combat. Both were highly trained Kshatriya princes. They fought long and hard, until one of them fell to the ground. As the would be victor raised his sword to strike the final blow in the conflict, he saw a cringing fear in the eyes of his opponent. This made him angry, A Kshatriya warrior is not permitted to feal or show fear.

Immediately, the victorious warrior withdrew. "Go," he said to his flattened opponent. "I cannot kill you in anger." In that princes world-view, a fair martial contest, even leading to the death of one participant, is a fulfilment of his swadharma or duty. But the moment anger or hatred enter into such an action, it is reduced to violence and thus becomes sinful.

Cannon Fodder

The same story appears in the Japanese tradition. A warrior set out to find and punish the man who assassinated his guru. For two years he searched high and low, finally tracking down the culprit in a forest cave. At the end of a bitter duel, the assassin fell and was about to be struck dead. At the last moment, the fallen man spat in the face of the victor, who became enraged and immediately pulled back. He could not carry out even a deserved punishment in anger. Instead, he let his opponent go, vowing to track him down yet again and carry out the execution in a fating manner.

Such stories offer little comfort to the modem soldier, who seldom comes face to face with his opponent, but fights with, and falls to, long-range weaponry. Is this why anger and hatred are now regarded as necessary weapons on both sides? In the absence of these emotions, we might begin to realise that soldiers on both sides end up being used as cannon fodder.

Instead, we seek to give meaning to the death of 'our' soldier by remembering his everyday humanity. In doing this, we make ourselves forget that the same is true for 'their' soldier Perhaps we fear that, if we think about the children on both sides whose daddies will never come home, our anger against the bad guy, 'Other' will be sapped,

Even if it is true that their violence came before ours, hatred and anger arc *never* neutralised by counter- hatred and counter- an ger. It is anger itself which is the only real 'bad guy' in the story

Not Utopian Idealism

It seems sacrilegious to suggest that the fallen soldiers and innocent civilians on both sides are actually the victims of those who foster anger and conflict. For, once we have accepted this, we all become accessories to the crime. Haven't most of us joined in the easy practice of hatred at some point?

One possible escape from this into recognise that the real enemy is a mind-set which holds strife to be the inevitable lot of humankind. But, to contradict that now famous piece of pop lingo, "We are not like that only "

There is an enormous power behind the conviction that we are here to pursue a higher evolutionary destiny. It is not utopian idealism to believe that the human species is slowly but surely evolving towards higher levels of being. Neither is this an esoteric and remote ideal. We can all participate in it by our daily actions. We can do this by seeing the conflict on our borders differ ently by refusing to participate in a seemingly endless cycle of conflict and hatred.

The best tirbute to the soldier who is laying down his life is not to vow further 'vengeance. Rather, we can work to ensure that his family will live in peace and his children will never be called to serve on any battlefield. Enough of us have to feel this way on both sides of the border, and act on our convictions, to prevent governments or terrorist groups from warring - either on our behalf,
or against us

South Asia: A Plea for Peace

The never-ending process of defence build-up in the Indo-Pak Subcontinent, will have to be, no matter what the ground situation, carefully tcrutinised and a balance struck between perceived military threats and the real risk of a dramatic economic crash.

Despite the crushing poverty of their respective populations, the two countries are spending approximately $ 30 billion a year on defence, twice as much as Saudi Arabia, a country 25 times wealthier. Both countries have six times more soldiers than doctors, in a region where epidemics, disease, starvation and death are rampant. How tragically comic that after bleeding their economies, the two governments, despite high and lofty slogans of breaking their respective begging bowls, continue to beg and submit to all sorts of conditionalities from IMF, World Bank and other international lending institutions.

Nations have no strength when their people starve, groan and grieve under immense economic hardships. South Asia trails behind while the rest of the developing world surges ahead. 800 million South Asians do without elementary sanitation, hilly 380 million are illiterate, and 300 million drink from ponds rather than taps. South Asia is just not prepared to enter the 21st century. It does not invest enough in its people.

India hopes to be a regional superpower, but cannot become one with the scale of sheer poverty that exists. The lesson of Cold War rivalry is not that capitalism triumphed over communism, but that political power not backed by economic strength is unsustainable. The Soviet Union collapsed because it could not feed its people. All its tanks, submarines and secret service meant nothing in the ultimate analysis.

Economic policies being pursued in the region are unlikely to improve the conditions of the vast majorities in these countries. The defence budgets of the region devour an overwhelming amount of revenues, followed by loan servicing and maintenance of a huge inefficient bureaucracy, with very little left for the social sector. For instance, Pakistan's military spending for the year 1996-97 was Rs. 115 billion. This means spending Rs. 316 million every day, Rs. 13 million every hour, Rs. 219,280 every minute and Rs. 3,654 every second, on the military. A day's saving on military spending can be spent on the development of one city. It costs about a million rupees to build a primary school in a village. By saving on arms we can pay for building over 100,000 schools in one year. It costs Rs. 2 lakhs to install a new tubewell for a village. By saving on arms we can pay for installing over half a million tubewells in one year.

Economic growth is not enough; there has to be distributive justice. Three decades ago, Pakistan had one of the highest rates of growth in the developing world - seven per cent a year. So why were people protesting on the streets? The reason was that economic growth had not touched their lives • Income distribution was skewed against the poor. The lesson was clear: you have to put people at the centre, enrich their lives, and provide them with options.

Amidst all the gloom, South Asia itself provides examples of the dynamism that can be released when human lives are made the focus. In Bangalore, once they started training people in computers, the industry took off and India is now the second largest exporter of software in the world. Before 1971, what was then East Pakistan, did not have significant industry. Today Bangladesh has out-competed India and Pakistan; it exports $2 billion worth of garments to North America and Europe. India and Pakistan must take the lead and turn South Asia away from the abyss.

The SAARC organisation has remained an exercise in protocol without substance. Beyond the realm of mutual distrust and consensual antagonism, SAARC must be energised and revitalised. Instead of issuing Utopian declarations at the culmination of each meeting, a down-to-earth approach should be adopted. Each member of SAARC must agree under a multilateral agreement to cut live per cent of military spending annually, and to earmark the money released for education and health. Having proved beyond doubt that they are established nuclear powers, India and Pakistan must also come to an understanding on the nuclear issue. Now is the time to act in a sensible, rational and prudent manner, sit down and talk about 'human' and 'social' issues, so that the enormous resources can become available for social needs.

The existing political structures of India and Pakistan are not conditioned to accept proposals such as these. For mis reason, the people should take the lead, through energetic advocacy and use of the increasingly powerful and border-less media. It is time for civil society to conduct a 'bypass operation' around reluctant politicians, who are never willing to stake their lives and reputations for social justice. Those who seek to restore normal dialogue and bring down the walls that separate people, can begin from a base that has survived years of undue, tension and confrontation. Participants in the Indo-Pakistan People's Forum, for example, or the Neemrana initiative, recognise a simple truth, that political obstacles to a normalisation of relations will be removed only by a demonstration of popular will by ordinary citizens. Today, the people of both sides of the divide have the opportunity to replace the language of confrontation with the vocabulary of reconciliation, to bring the sufferings of the Kashmiri people to an end, to reverse the economic deterioration of a region with enormous potential and to join the rest of the world in dealing with the threat we inevitably face and the promise we can all share.

Of course, there are tremendous vested interests in the power structures of the two countries. There is little understanding of the social opportunity costs of buying more and more sophisticated armaments. But why should we assume these are immutable? Eve-

ry where outside our subcontinent, people are leading change, which comes about much faster today because ideas cross borders much more easily. We should, therefore, let the talk of missile development and nuclear proliferation give way to talk of human development. Let the job of building confidence begin and the history of mistrust and suspicion come to an end. Let the great civilisation of this extraordinary part of the world flourish once again. Let the voice of its poets speak of peace. Let merchants and traders of business interact ; let good now freely between markets. Most important, let our children live, without fear and without rancour, united in hope, speaking thecommon language of a people at peace with themselves.

Ahson Saeed Hasan
The Nation Wednesday. July 7.1999

Shame On Us

In a new report published on July 16, Human Rights Watch charged that human rights violations by all parties in Kashmir have been a critical factor behind the conflict.

The report says that if those violations had been seriously addressed at any time over the last ten years, the risk of a military confrontation between India and Pakistan might have been reduced. The escalation in fighting has made it urgent that the international community put pressure on India to end widespread human rights violations by ils security forces in Kashmir, and on Pakistan to end its support for abusive militant groups.

"The diplomats have focused on getting India and Pakistan each to stay behind the so-called "Line of Control,'" said Patricia Gossman, senior researcher with Human Rights Watch. "But repression and abuse on both sides are keeping this conflict alive. Unless there is pressure on both India and Pakistan to end the abuses, international diplomacy to defuse the conflict is bound to fail."

The 44-page report, Behind the Conflict in Kashmir, focuses on the border areas in southern Kashmir where militant forces have been crossing over from Pakistan. The report documents several of the massacres of Hindu civilians carried out by these groups and their local counterparts, in which more than 300 civilians were killed between 1997 and mid-1999.

In response to these attacks, Indian forces in the area have retaliated against local Muslims whom they accuse of supporting the militants. The brutal tactics they employ — including summary executions, "disappearances," torture and rape'— have provoked widespread alienation from India.

The Indian army has aggravated the situation by recruiting ex-servicemen, who for historical reasons are almost exclusively Hindu, to serve in Village Defence Committees (VDCs) that assist the army in military operations. In Doda and the border districts, where the population is nearly evenly divided between Hindus and Muslims, there is growing concern that tensions between the two communities might ignite a wider commonal conflict.

Although fighting has waned elsewhere in the Kashmir valley and the Indian government has claimed that "normalcy" has returned, abuses by the army, federal paramilitary forces and a newly constituted police force arc rife. Human rights defenders been killed. tortured and threatened, while detentions and "disappearances" have left residents fearful of speaking out.

Indian forces have also continued to arm counter militant militias to work with the army and other security forces, but without any official accountability. These militias have assassinated human rights activists and journalists and have threatened and assaulted other civilians.

Custodial killings — the summary execution of detainees—remain a central component of the Indian government's countenn-surgency strategy. In this report, Haman Rights Watch documents nine that occurred in 1998 and one that occurred in 1997. The killings continue because senior Indian officials say there is no other way to counter a serious "terrorist" threat.

"Disappearances" of detainees also remain a serious problem. Not only has chetiractice continued, but there has been no accountability for hundreds of cases of "disappearances" that have taken place since 1990. Indian security forces also engage in brutal forms of torture which likewise have the sanction of senior officials. The latter privately jusufy the practice on the grounds that there is no other way to obtain information from a suspect. In fact, torture is also routinely used to punish-suspected militants and their supporters, and to extort money from their families.

Methods of torture include severe beatings with truncheons, rolling a heavy log on the legs, hanging the detainee upside down, and use of electric shocks. Indian security forces have raped women in Kashmir during search operations, particularly in remote areas outside of major cities and towns.

Prosecutions of security personnel responsible for abuses arc rare. The Suite Human Rights Commission's work is severely hampered by the fact that it cannot directly investigate abuses carried out by the army or other federal forces. Although government officials claim that disciplinary measures have been taken against some security personnel, criminal prosecutions do not take place.

Militant groups operating in the Kashmir valley have also targeted civilians, assassinating political leaders, civil servants and suspected informers. They have massacred Hindu families and threatened others in an attempt to drive Hindus from the region.

The report is based on a mission to Indian-controlled Kashmir *in* October 1998. India does not officially permit international human rights organizations to conduct investigations, the report is available at Human Rights Watch's web site:

http://www.hrw.org/reports/1999/kashmir/

Not An Inch Of Our Land But What About The People?

Rashme Sehgal

A huddle of 30 dishevelled children sits on the cold floor of an improvised classroom over looking the snow-capped mountains whose slopes dip sharply into the turbulent Sindh river. They have no textbooks, no pencils. But their teacher Ghulam Mohiuddin, from the village of Matayan in the Kargil district, holds classes every morning. The children repeat their multiplication tables in an attempt to pretend things are normal.

Mohiuddin, 52, looks on sternly. He does not hesitate to thump a child if he gels too frisky. "It would have been better if the local administration had provided these children with text books so that they do not lose a crucial year. But since they have not visited us even once to find out whether we are dead or alive or even bothered to give us essentials like rice and kerosene or money with which to buy them, expecting them to fork out school books is asking for the moon," he says.

The village of Matayan has 400 inhabitants. On the night of May 13, the Pakistani army started shelling this settlement. The terrified villagers, the majority of whom are Muslims, trekked down the Zoji Lapass, making their way down to the safety of the village of Kulan, located at 8000 feet.

"We left our homes in panic. We brought nothing, not even our warm clothes. We left behind our cooking utensils, our grains and our animals, certain that the government would help us till we could return home" says 50-year-old Noori.

"But we have become beggars in our own country," she laments. "We would have starved were it not for the kindness of the local villagers. They have fed us and allowed us to live in their homes. We are grateful for that." The people from her village nod in quiet agreement. They have yet to come to terms with such bureaucratic callousness.

"Most of the villagers who have migrated from Matayan are suffering from malnutrition, gastro-enteritis and scabies," says Dr Shabir, a medical officer with the Jammu and Kashmir state government working at a nearby dispensary. "Were it not for the locals, things would have been worse."

If Matayan is the first village that you encounter crossing the Zoji La pass, Pandrass, at 10,000 feet, is the second. The villagers from there, now living in the village of Gagan Gir, have an equally harrowing tale of state neglect.

The shelling of Pandrass began on May 6. The villagers hoped it would end quickly, and so initially refused to leave. The Indian army, unwilling to take chances with their safety, provided them with transportation up to Neelgral, from where it was a three-day march down to Gagan Gir. The journey was a nightmare. The nights were bitingly cold and this group of 200 doughty villagers — many with their children — were forced to sleep in the open.

Still they were better off than their brethren from Matayan. The J&K Power Development Board had a number of offices lying vacant in Gagan Gir and they were given permission to stay here. But Faiz Ahmed Kari, district project officer in Kargil, who was forced to leave his home and move here with his family, complains of the lack of other support.

"For 60 years, we have looked after the borders. In winter, the temperature here drops to minus 50 degrees Celsius. We live in mud housesnhat are completely sealed off for seven long winter months. We live with our cattle on the same floor for the warmth of their bodies. We stock up food like 'sattu' (roasted barley flour) and survive on salt lea with yak milk.

"Now we have come away, leaving our homes empty. Our animals are at the mercy of half-wild dogs. Surely the government owes us something. A few government functionaries have visited us but have extended no aid whatsoever. Shabir Shah is the only leader who has been to our camp and has given Rs 500 in cash to each family. Surely the government should realise that we need special assistance," Kari adds.

Wherever one goes, there is a smouldering anger at how a diligent and stoic people, unafraid of coping with extreme weather and negligible natural resources, have been given the short shrift by the state government.

Some compare their flight with that of the Kashmiri pandits in Jammu. Abdul Wahid, an agricultural officer in Kargil points out, "When the Kashmiri pandits left the valley, look at the hue and cry created in the press. Today every Kashmiri pandit family forced to leave is receiving Rs 2,500 per month from the government. In comparison, the only aid we have received is five kilos of rice per family and four kilos of kerosene. How far will that get us?"

Many of the villagers simply want to be allowed to go back to their homes to bring back essentials. "Surely the army should grant us permission to get some stock to help us survive," is a common refrain.

The Kargilis face an uncertain future. The farmers fear the loss of their animals. The children fear the loss of a year of their education. And together, they fear the winter that will set in, come September. Drass is the second coldest inhabited place in the world. Matayan and Pandrass are no less uninviting. They have learnt to fight the adversity of nature, but the indifference of the local government? That hurts.

The Tunes of India Review, July 4, 1999

A Way Out of Kashmir Quagmire

S. P. Udayakumar

It will soon be minus fifty degrees celsius in the heights at Kargil, Even urinating is a - painful activity at such temperatures. Our soldiers no doubt deserve the best to cope with the conditions. But what about the people who live there year in and year out. Don't they too deserve our help? Are they not Indians?

There is no dearth of patriotic fervour, nationalistic rhetoric, strategic analysis, ami mindless moralising on Kashmir but one can hardly find any concrete proposals to get out of this quagmire that has sapped the resources, energies and vitality of both India and Pakistan.

Probable Solutions

There are a range of possible solutions:

1) Either of the countries having whole of Kashmir
2) Both not having it
3) Both having parts of it.
4) Both having the whole of it.

Neither India nor Pakistan would even think of letting the other have Kashmir completely. If one of them were to do that, we would not have this conflict at all.

The other option *of* both countries having parts of Kashmir has not worked. India has controlled two thirds of Kashmir as the state of Jammu and Kashmir, and Pakistan the remaining one third of it as Azad Kashmir (after acceding Shaksgam and a few other pockets of land to China which also controls Aksai Chin area). This unofficial division along the Line of Control' has always been considered by both India and Pakistan as some kind of an interim arrangement before they acquire complete control over the whole of Kashmir Kargi1 episode demonstrates all this amply well.

There are powerful groups who demand reunification of Kashmir and complete independence from both India and Pakistan. Can all the Kashmiris together form a viable country of their own? Both India and Pakistan are united in refusing to even consider this possibility.

It leaves us then with only one option both India and Pakistan having the **whole** of Kashmir One may wonder how on earth is it possible lor the two age old archenemies together to administer peace and justice to the Kashmiris? One may argue that religious antagonism, communal mistrust, social myths, historical traumas, and military wars arc not conducive to this arrangement But South Asians are in a situation where they need to choose between swimming together or sink ing together.

As the first step. both the Indian and Pakistani elites should come to grips with relity. Instead of concentrating on the strategic, political, historical and cartographic anti -eties from then viewpoints, the ehies should open up the arena for popular discussions

When the "ordinary citizens" of India and Pakistan begin to debate openly and freely that will free up our political creativity and enhance our ability to find an amicable settle ment for the issue

There are many ways for India and Pakistan to have the whole of Kashmir Joint administration of the reunified Kashmir of each country adminstering spcific departments in the reunified Kashmir's government, or divided administration that is area specific, period specific, duration specific and so forth

India. Pakistan, and Bangladesh would need to undertake a bold Constitutional reform program, give greater autonomy to all of then provinces and retain only some key areas such as defence, foreign affairs, currency matters, environmental policy and so forth for the led eral government in New Delhi, Islamabad and Dhaka. The most practical way would be India's and Pakistan's area specific administration of Jammu And Kashmir a*nd* Azad Kashmir that are coupled together in a broader framework. As Kashmiris of both Jammu and Kashmir and A/ad Kashmir manage their own affairs jointly under the new Constitutional reform programme, India and Pakistan tan hold on to the portions they have right now

for administering defence, foreign affairs, and other federal responsibilities in close consultation with each other.

Make Kashmir the Subcontinent's Antarctica. The area that has kept us all divided and poor can be made into a stepping stone for a new beginning for friendship, dignity and development.

The 26 states and six union territories of India, the four provinces. Azad Kashmir, 'tribal areas' and federally administered areas of Pakistan, and the five divisions of Bangladesh can create a loose regional confederation of "Union of Subcontinental States" with economic co-operation, free travel, educational and cultural exchanges and other such confidence building and development enhancing measures.

All this may sound very idealistic or even naive. But then ending the cold war, abolishing apartheid, or bringing the Israeli Jews and Palestinians together all sounded naive and idealistic not too long ago.

The Hindu, July 01. 1999

"But friend I am just mad"
By reading hooks and piling up knowledge,
I tortured my mind, gaining nothing
Never did I *lighten the lamp of my heart*
Thus always chose the crooked path
Never shared the pain of the oppressed
Only scatterred around words cheap and meaningless
was mad all life through

Inayatullah

Breaking Out of the Suicide Pact

More than 500 enthusiastic peace-mongers gathered in Karachi recently — in the first conference of its kind in the region — to demand an end to the nuclearisation of the region and a no-war pact between India and Pakistan as a follow-up to the message of peace and goodwill generated by the meeting of the Prime Ministers of both countries in Lahore recently.

Organised by the Pakistan Peace Coalition (PPC), a national body formed following the Indian and Pakistani nuclear tests of May 1998, the two-day Pakistan Peace Conference had a distinctly South Asian flavour, with the attendance of some 30 Indian delegates who got Pakistani visas literally at the last minute. Participants included activists from Sri Lanka, Bangladesh and Nepal besides over 400 from all over Pakistan.

PPC comprises the various organisations working for social justice in different Pakistani cities. Its members are basically activists who found their agendas overtaken by the nuclear issue following the May 1998 tests. Delegates to the conference, besides NGO representatives, included economists, film-makers, journalists, lawyers, doctors, trade unionists, women's rights activists, scholars, retired army personnel, students and artists.

There is a symbolic significance in choosing Karachi as the venue, said conference convener B M Kutty, pointing out that this city has been in the news as a violence-prone area. This conference sends out the message that this city and its people ardently desire peace, not only for themselves, but also for all those who live in this country and in the region. Peace in this city is essential to the emergence of a meaningful peace movement in Pakistan.

Until May 1998, all those working for peace and justice presumed a continuity of state and society, commented Zia Mian, a Pakistagi physicist currently teaching at Princeton University, USA. Nuclear weapons threaten that continuation as nothing else has ever done.

Also from the USA was journalist and researcher Lawrence Lifshultz, who co-edited a book published last year — Hiroshima's Shadow, an anthology that explodes the 'myth of Hiroshima' — popular beliefs that justify the USA's nuclear bombings of Hiroshima and Nagasaki in August 1945. 'The gathering here has interrupted my pessimism,' commented Lifshultz, who is currently working on another publication on nuclearisation.

What's very encouraging is that the demands of the Pakistan-India People's Forum for Beace and Democracy, considered Utopian just a year ago, have infiltrated the official agenda — people-to- people contact, reducing tensions and negotiating through dialogue. So what's happened at this conference could also influence what happens at policy or state level.

Talking about the principal tool the state has employed to subdue civil society — the bogey of national security — PPC organising committee member and Director of the Human Rights Commission of Pakistan. 1 A Rehman, in his keynote address commented that the nuclear tests had delivered a most foul blow to people's interests by raising the spectre of their extinction.

Perhaps it was this spectre that galvanised the spirit of voluntcerism so evident at the conference, to attend which most Pakistani and overseas participants had paid for their own travel — with the organisers only taking care of room and board in addition to the registration fee of PKR200.

The spirit of cooperation was also very evident in the response to Bombay-based filmmaker Anand Patwardhan's announcement of the peace march due to start from Pokharan on 11 May, the anniversary of the first Indian nuclear test last year. Hundreds of participants signed the petition he circulated, along with donating at least one rupee each to contribute towards the march, totalling over R l.000 by the time the conference ended.

Many justify the nuclear tests of last May by saying that a balance of terror has been created and therefore the danger of war between India and Pakistan has disappeared. A view that IA Rehman is not prepared to give credence to because ' I am not prepared to credit the apparatuses governing us with the ability to break out of the suicide pact they have painstakingly created.'

Besides the element of human error, he noted, was the point that nuclear weapons have nowhere created a balance in favour of sanity — they have only unleashed a mad race for deadlier weapons for mass destruction. Above all. they do not cause havoc only when they arc used in war; their presence in a country itself causes grave harm to the state and the civil society.

Nine working groups, ranging from 25 to 60 participants each, deliberated various questions from the nuclear issue perspective. The idea, rather than announcing a charter of demands, was to spell out what society wants and to give a direction to the struggle to achieve it, explained conference organisers, who are hoping that participants would return to their areas armed with a better understanding of what peace means in today's conditions, and how best to politically mobilise people around a peace agenda. This conference is a rare opportunity for activists to get together, commented scholar Hasan Gardezi, who, like many, is wondering if the peace movement in Pakistan can become an agent of social change.

Islamabad-based political activist and development economist Kaiser Bengali agreed. "There is a need to link movements like this in the larger effort Isolated, standalone efforts don't bear fruit,' he said, as charged participants did a symbolic round of the conference venue on the last night, singing songs, and holding aloft flaming torches and white flags.

'We need to make it pan of a larger political effort to restructure the state, otherwise it will just be part of what I call Pepsi politics —there's a bit of fizz and then everything settles down. This mustn't be allowed to fall by the wayside like previous efforts.'

Beena Sarwar

The Role Model

In May, India and Pakistan celebrated their first anniversaries as declared nuclear weapon stales. On June 11, the United States will continue to celebrate 54 years as a nuclear weapon state by dedicating a facility that will be used to conduct more nuclear explosions. This celebration will be by deducating to the nation a facility known as "National Ignition Facility" (NIF) at the Lawrence Livermore National Laboratory (LLNL) in northern California.

The National Ignition Facility's goals include achieving contained thermonuclear explosions and maintaining the US's nuclear weapons capabilities. *The* NIF clearly violates the Comprehensive Test Ban Treaty, which commits the United States 'not to carry out any nuclear weapon test explosion or any other nuclear explosion.'And, since the achievement of a Comprehensive Test Ban Treaty was an explicit decision made in connection with the 1995 extension of the Nuclear Non-proliferation Treaty, any activity which violates the Test Ban also violates the Non-proliferation Treaty "

LLNL, managed for DOI- by the University of California, is one of the nation's two premier nuclear weapons research and development institutions. The National Ignition Facility (NIF), a stadium-sized inertial confinement fusion project now under construction at LLNL would be the world's largest laser facility, It is the centre-piece of the $45 billion (10 year price-lag) "Stockpile Stewardship" program to maintain and enhance U.S. nuclear weapons design capabilities under the Comprehensive Test Ban Treaty (CTBT) signed by President Clinton in September 1996. The NIF would operate by focussing 192 powerful laser beams onto a pea-sized capsule of radioactive tritium and deuterium, forcing the two heavy isotopes of hydrogen to combine through compression, and causing a momentary thermonuclear explosion that will crate extremely high temperatures approaching those reached in full scale underground nuclear tests. If this works — controversy still exists within the scientific community, "ignition" will be achieved, producing a seltsustaining fusion reaction and resulting energy gain.

In May. in a massive display of nuclear nationalism, the government of Pakistan ordered 10 days of celebrations to mark the anniversary of its first nuclear tests. May 28. 1998 The Ministry of Sports and Culture arranged special events across the country and the National Council of the Arts organised a national an competition to commemorate the tests. May 28. the day of the anniversary was a national holiday. It began with a 21 gun salute, followed by special prayers of thanks at the mosques, and a minute of silence followed by the national anthem at the precise moment Pakistan detonated its nuclear tests. The prime minister addressed a public rally at the mausoleum of the founder of Pakistan, and laterpresided at an award ceremony to honour Pakistans nuclear weapons scientists India commemorated the anniversary of its own nuclear tests in a more understated manner, focussing on the purported benefits of science and technology.

'The only thing that separates the United Slates from Pakistan is 54 years of nuclear explosions and the enormous wealth of the most powerful country on earth," noted Jackie Cabasso. India, which really became a nuclear power in the l970's. in part through its own mertial confinement fusion program, demonstrates its longer experience in the quality of its propaganda, which more closely resembles that of the U.S." She explained, This NIF 'dedication' ceremony is nothing but a trumped up public relations gimmick to divert attention from our real national security concerns — security of people in their daily lives. The major threat to global peace and security is the United Slates' continuing drive for global domination through displays of massive high-tech military force backed up by the threatened use of nuclear weapons, as we've just seen *in* Yugoslavia. The NIF is part. and parcel of that system "

The French Atomic Energy Commission Department of Military Applications, which has worked with LLNL since 1981 on co-operative laser fusion programs is currently collaborating with Livermore to build the

Megajoule laser facility, virtually identical to the NIF, in Bordeaux, France. On June 4,1996, U.S. and French officials signed a memorandum of agreement extending the range of nuclear weapon information they can share. A section on Stockpile Stewardship authorises co-operation on "theoretical, numerical, and experimental simulation methods." Another section permits information exchanges on research, development, testing, fabrication, transportation, and disassembly of both nuclear and explosive components. U.S. and French scientists will also have extensive access to each other's laboratories. The agreement provides for co-operative use of, and "long term visits or assignments or technical personnel to participate in joint projects."

U.S. and British weapons labs also have for many years enjoyed a close relationship, even sharing underground testing facilities in Nevada. Their joint working groups discuss nuclear warhead physics, nuclear weapons engineering, nuclear weapon code development, computational technology, and other related subjects. In 1997 it was reported that the UK Ministry of Defence was actively talking with the U.S. and France about above ground experiments and computer simulation. It was also reported that technical discussions between Britain and France on hydrodynamic experiments, laser plasma physics, computer simulation, and possible arrangements for peer review, were taking place. At the 1995 Anglo-French summit, a joint statement was issued, noting, "the considerable convergence between our two countries on nuclear doctrine and policy."

According to Sally Light, "Given the sensitivity around the current allegations of foreign espionage, it is astonishing that the DOB is advertising its close co-operation with France and Britain. Who decides which countries are the good guys and which are the bad guys? The only country that's ever used nuclear weapons?"

In February of this year, a letter was presented to the Regents of the University of California urging the University to declare a moratorium on construction of the NIF at LLNL. The letter, which was signed by 116 organisations and individuals, including academics and scientists, advised the Regents that contained thermonuclear explosions to be conducted in the NIF "may be considered illegal under the CTBT," which prohibits "any nuclear weapon test explosion or any other nuclear explosion," The CTBT also requires parties to "prevent" nuclear explosions in their jurisdictions. The letter concludes, "the Regents should take whatever action is necessary for the Laboratory to suspend work on the NIF project until the legal questions are resolved...The Regents could also use the time during the work suspension to conduct a university-wide debate on the appropriateness of one of the world's greatest universities continuing with nuclear weapons research. This should be a matter of far wider debate within the academic community and the country as a whole. We urge that you use the occasion of the NIF review to initiate that debate."

In a related effort, Ms. Light, with the input of American and French colleagues, has drafted an international petition, available in both English and French, calling on the U.S. and France to respect their commitments to the CTBT and the NPT by immediately halting NIF and Megajoule construction and declaring an end to all such projects.

Sally Light summed up, "The U.S. National Ignition Facility and the French Megajoule laser not only violate the CTBT, they also threaten the current internltional ratification process of the CTBT, and jeopardise nuclear non-proliferation efforts by encouraging other countries to undertake similar programs." Jackie Cabasso added, "In short, N.I.F. means Nuclear Insanity Forever."

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World

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ANUMUKTI

A Journal Devoted to Non-Nuclear India

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Kudankursk

Their sub sinks in the Barents Sea;
clueless ami helpless, they keep wrenching their hands.
Their sailors the drowning together in the iron cage,
And the Nero-put in plays his fiddle in the Black Sea resort!

Defying nukes, leaks, decimation and death,
Norwegians offer hely but they aren't loo eager.
Their ostankino glory burns earthward for 26 hours;
They're looking up to the Heavens for miracles!

Stale of the state worries bureaucrats,
slide in infrastructure bothers technocrats,
Spate of events shatter the politicos and
State of the coffers makes them all panic.

The "pitiful helpless giant," as their leader calls it,
thought in gargantuan terms but is fast crumbling down,
seeds money, jobs, foreign projects and guinea pigs
To instil life into economy and stay afloat on the world may.

here they are on our shores, on the My of Bengal,
parading discredited technologies and doubled know-hows
And playing with our lives and futures for their survival,
why does Koodankulam sound now as Koodan-kursk?

S. P. Udayakumar

Events Diary

August 6. 2000

Jaduguda: About 1500 local children had made hundreds of paper cranes in memory of all the children who had perished in the nuclear holocaust at Hiroshima. More than 50 children suffering from different forms of deformity and mental retardation took part in a painting workshop. The programme culminated in a procession where the Uranium Corporation was asked to stop its pollution. We have received reports of large number of programmes in various schools in Nagpur in which more than ten thousand children have participated.

August 9, 2000

Calcutta: Police beat up demonstrators protesting against a state government decision to build a nuclear power plant in West Bengal. More than 100 organisations had participated in organising the peaceful demonstration which was attacked without any provocation. 41 people were arrested and even women were illegally manhandled by male police.

May 15-26,2000

Pokran: Anumukti team in collaboration with Swaraj Trust of Rajasthan completed the data collection for a comparative health survey of five villages in Jaisalmer and Jodhpur districts. Analysis of this data is proceeding.

Coming Events

11-13 November 2000

Delhi: National Convention for Nuclear Disarmament and Peace is being held in Delhi from 11 to 13 November 2000. All antinuclear energy activist should participate to draw attention to the close connection between the Atoms for War and the Atoms for Peace programmes. Unfortunately this connection is not apparent to many peace activist.

11—30 September 2000

Jaduguda: Anumukti team in collaboration with JOAR will conduct a comparative health survey of villages in the vicinity of the uranium mines at Jaduguda.

From

A Cautionary Tale

As work continues on a "feasibility study" for construction of two Russian VVER-1000 light water reactors at Koodankulum, Indians would do well to review Russians' sad experience with the atom. Many things are still unknown about the Soviet nuclear program. Debates continue among experts as to the number of tons of plutonium (and therefore also the volume of reprocessing wastes) that have been produced. Little is known about early waste dumping practices. Information on the health of workers and neighbors of nuclear plants is even more difficult to obtain and evaluate. Yet, the overall picture is clear. From nuclear submarines decaying in northern and eastern ports, to the Semipalatinsk test site in the south, in present-day Kazakstan, the race to produce nuclear weapons has resulted in environmental contamination on an enormous scale, with site-by-site contamination measured in millions and billions of curies. In addition, even a full decade before Chernobyl, the Soviet people had already experienced a reactor accident that must rank among the world's most serious (SEE P. 5).

The Soviet nuclear establishment acted little differently from that of any other country in terms of their disregard for the human consequences of their activities. But the scale of their production, combined with the complete lack of public oversight, put the resulting damage in a class of its own.

Russia provides a cautionary example to Indians for another reason as well. If nuclear energy is dangerous in a wealthy country, it can be disastrous in a poor one As former nuclear regulator Vladimir Kuznetsov (P. 4) reminds us, when money is tight, safety and environmental provisions are the first to go.

There have been widespread movements in Russia to bring an end to nuclear production, and to draw attention to the suffering brought about by the carelessness of the nuclear establishment, from referenda blocking new reactor construction, to independent monitoring efforts. But, as articles on page 7 demonstrate, the task of these activists is getting increasingly difficult and dangerous, as environmental concerns take a backseat to the desire for quick profit. Nowhere is this callous equation clearer than in the Ministry of Atomic Energy's (Minatom) invitations to foreign countries to export their nuclear waste in Russia, with the resulting revenue to be used for new reactors (with the subsequent production of even more waste). With the drying up of its traditional government sources of funding, Minatom has turned its gaze abroad. A project to convert surplus weapons plutonium into reactor fuel (with financial support from the US and the G-8 countries), and export of reactors and other technology are two additional potential funding sources for Minatom's ambitious construction plans. Unfortunately, Minatom's willingness to clean up existing sites does not match its zeal for new projects.

Thus Indians have an additional, neighborly reason to oppose the reactors at Koodankulum. They will not only be safeguarding their own future, but by denying funds to an irresponsible Russian nuclear establishment, will also be lending a hand to the many Russians who are trying to put an end to their country's nuclear nightmare.

—Anita Seth

Russia Is an Eco-Disaster, and It Just Got Worse

A couple of months ago, Russian President Vladimir Putin abolished his country's environmental protection agency—a decision that bodes ill not only for the people and ecosystems of one of the world's most polluted nations, but also for the security and environmental health of the entire world.

Acting by decree and without explanation, Putin shut down the State Committee for Environmental Protection on May 17 and transferred its responsibilities to the Natural Resources Agency, the government body that licenses the development of Russia's vast stores of petroleum and minerals.

After eliminating the State Committee on Forestry, Putin completed his governmental reorganization by naming Alexander Gavrin, who has close ties to the country's biggest oil producer, Lukoil, as energy minister. In short, Putin has put industrial foxes in charge of the environmental henhouse.

Created as a cabinet-level body under Mikhail Gorbachev in 1991, the Ministry of the Environment was downgraded to a mere State Committee in 1996 by the newly reelected Boris Yeltsin. But many Russian environmentalists point out that the committee played a positive role in some cases—it helped the Russian environmental law firm Ecojuris stop Exxon from dumping toxic waste from oil drilling into the seas off the Sakhalin peninsula, for example. Despite their frequent criticisms of the committee's inadequacies, alarmed activists are now gathering signatures to force a national referendum on Putin's decree. "Even a shabby State Committee for the Environment is better than no environmental monitoring body whatsoever," argues Greenpeace Russia spokesman Alexander Shuvalov.

Victor Danilov-Danilyan, who headed the committee when it was abolished, notes that 61 million Russians already live under environmentally dangerous conditions. In 120 Russian cities, air pollution levels are five times higher than acceptable, according to Russia's own standards. One million tons of oil the equivalent of 25 Exxon Valdez spills—leak out of pipelines and into Russia's soil and water every month. The Russian new s agency Tass reports that 30 percent of Chechnya is an ecological disaster zone, thanks in part to the 26 oil wells that have been on fire nonstop for months.

Nevertheless, one day after Putin's announcement, the Natural Resources Agency declared it planned to "simplify" rules governing environmental behavior in Russia. Logging policy in particular is slated for overhaul. Russia contains 22 percent of the world's forests more than any other nation. With help from a $60 million loan from the World Bank, the Putin government plans to improve the investment climate for logging in Russia. Leveling Russia's vast forests will speed the extinction of countless plant and animal species, it will also remove a major source of fresh air and water and a counter to global warming.

Nowhere are Putin's actions more frightening, though, than with respect to nuclear technology. The State Committee for Environmental Protection did not directly oversee Russia's nuclear industrial complex, but Putin's business-first attitude seems certain to carry *over* to nuclear policy. Not one of Russia's 29 nuclear power plants has a complete safety certificate; many have been cited for hundreds of violations. Yet Putin's minister for atomic energy, Yevgeny Adamov, wants to build 23 more nuclear power plants, plus another 40 advanced, "fast breeder" reactors.

Adamov says fast breeder reactors will make Russia rich, which is the same reason he offers for changing Russia's laws to allow the import of tons of nuclear waste- as if Russia isn't already choking on the stuff.

During the Cold War, the barbors of the Kola Peninsula (in northwestern Russia near the border with Norway) were home to the Soviet Union's Northern Meet, which dumped used submarine reactors, spent fuel and other nuclear debris into the sea with abandon. The waters now contain two-thirds of all the nuclear waste dumped into the world's oceans.

The problems at Kola came to light through the work of Alexander Nikitin. who was arrested by federal security services (FSB) in 1996 on charges of treason and divulging state secrets (SI I P. XX) Putin, who headed the ESB in 1998 and 1999, defended the FSB's aggressive stance toward Nikitin and other environmentalists, asserting last year that environmental groups provide convenient cover for foreign spies But Putins May 17 decree suggests that his real concern is not that environmentalists will compromise state security, but that their efforts will elevate ecological purity over the speedy resource development that the Russian leader believes his country needs

Mark Hertsgaard
The Washington Post, July 9. 2000

Mark Hertsgaard is the author of "Earth Odyssey: Around the World in Search of Our Environmental Future" (Broadway Books).

The Whistleblower Is Whistling, But Are We listening!

Safety Problems in the Russian Nuclear Complex

V. M. Kuznetsov

V.M.Kuznetsov is a Russian nuclear industry insider. He has worked in nuclear power plants as well as in Gosatomnadzor the Russian nuclear regulatory agency. What he has written is written with an expectation that the Russian nuclear industry would overcome its myriad problems. We in India need to seriously consider all these problems before committing ourselves to this nuclear technology at Koodankulam.

The number of incidents at nuclear facilities in Russia continues to increase, due in part to gross violations of nuclear and radiation safety regulations (unskilled handling and losses of ionizing radiation sources, unplanned doses to workers and the surrounding community, etc.). These incidents occur because of inadequate worker training, the irresponsible attitude of managers and specialists, and the overall poor culture of safety among workers at nuclear plants and among the population.

The situation is compounded by the poor quality and significant degradation of

- equipment, and planning mistakes made during the construction of plants posing nuclear and radiation hazards.
- Long-term use of atomic energy for peaceful and military purposes without legal regulation has also contributed to the situation, giving rise to many problems demanding urgent solutions (plant decommissioning, overhaul of operating facilities, long-term storage of radioactive wastes, etc.).

In addition numerous violations at nuclear power plants (NPPs) and other Minatom facilities, a number of serious accidents, accompanied by releases of radioactive materials into the environment, have occurred, including those at the reprocessing plants at Tomsk-7 (1993) and at Chelyabinsk-65 (1994, 1995).

Decision-making in earlier periods failed to guarantee safety in nuclear materials use, and to some extent in spent fuel reprocessing and long-term storage, which now require large financial and material resources.

When Money Becomes Tight, Safety Is The First Casualty

The country's current economic situation (the slump in production, breakdown in production networks, increasing production expenses, difficult finance situation facing most operations, especially governmental) has led to the development of additional factors affecting the condition of nuclear and radiation safety, such as:

- loss of leading highly-qualified professionals, who have been replaced by a pool of incompetent specialists;

a reduction in staff overseeing facility safety, including offices that carry out nuclear and radiation safety controls;

- insufficiency, and in most cases total absence of funding for replacement of outdated or nearly expired equipment and instruments that are important to guaranteeing safety
- sharp increase in the cost to facilities of labor and services for maintenance of nuclear and radiation safety, including for transport and storage of radioactive waste, and disposal of contaminated uniforms
- the weakening role or liquidation of ministerial control over facility safety
- the absence of a strong, meaningful independent governmental regulatory body in Russia.

From: Russian Atomic Energy Yesterday, Today and Tomorrow (Moscow: Golos-Press, 2000).

History of VVER-1000 reactors

Balakovo Nuclear Power Plant

The Balakovo NPP is located on the banks of the Volga River, 160 km up from the city of Saratov. Originally, Balakovo was planned to be the biggest nuclear power station with proposed construction of 24 reactors along the Volga. However, after the Chernobyl accident and numerous protests by the "greens," the number of proposed reactors was reduced to six.

Construction on the plant began in 1980. Today there are four VVER-1000 reactors operating there. The first started operating in 1985, the second in 1987, the third in 1988, and the fourth in 1993. The third and fourth reactors have been operating under restricted capacity of up to 90% since 1993.

On July 31 1992 the Malyi Soviet (lower house) of the Saratov regional parliament adopted a decision regarding further construction and operation of the Balakovo NPP which, in part, supported a resolution by the Balakovo city council prohibiting the fuel loading and start-up of the fourth reactor. In addition, a decision was made to appeal to the upper house of the federal parliament to take a decision to remove construction of the second set of reactors at Balakovo from its energy development plan.

On 25 April 1993, a referendum was held in Balakovo on the construction of the fifth and sixth reactors at the NPP. 73% of voters opposed the construction.

In late February 1993, fuel loading began without notification of local authorities or the public, in mid-March, fuel loading was completed and the reactor began operation. However, soon the production of the reactor was reduced to 50% due to a lack of electricity demand.

The history of the start-up of the fourth reactor is notable also in that the current head of Gosatomnadzor [the Russian atomic regulatory agency] Yuri Vishnevskij was the head of Gosatomnadzor inspections at the Balakovo plant until 1991. (Balakovo at that time held the leading place among Russian nuclear power plants in incidents.)

In campaign speeches, Vishnevskii promised that if he was elected as a deputy to the upper house of the federal parliament, he would not allow the start-up of the fourth reactor, nor the construction of the fifth and sixth reactors at Balakovo. But times change, and in taking leadership positions, people themselves change. With the break-up of the Soviet Union, he moved from his deputy's chair into that of the head of the country's regulatory agency, and of course forgot everything that he had promised to his constituents.

Construction on the fifth reactor was begun in 1987, and the sixth in 1988. Recently Rosenergoatom [the Russian utility that operates NPPs] has evinced an interest in completing and starting up the fifth reactor.

The most pressing operating questions for all VVER-1000 reactors are: maintaining the required level of integrity of the reactor vessel, increasing the effectiveness of control, instrumentation, and electricity-production systems, increasing reliability of steam generators, and reliability of diagnostic systems.

But there is an additional set of problems specific to this particular power plant.

First, there is a danger of flooding in the case of a breach in the Samarskaya dam, which is located upstream on the Volga.

Second, construction irregularities were tolerated when the reactor foundation was laid. Settling occurred more quickly, and unevenly, than was projected,resulting in construction difficulties, especially for the first reactor. A "counterweight"*-a concrete beam stretching from one side of the roof to the other— was built, in order to "guarantee absolute horizontality of the main reactor vessel and its associated equipment." The plant administration, which initiated this method, called it a "technological novelty."

Below are some of the most serious incidents that have occurred at the Balakovo plant:

■ During tests of the first reactor in 1985, before it was loaded with fuel, a pipeline break caused by worker negligence killed thirteen people. The person who allowed the accident to occur, after one year of confinement, became a personnel instructor at the Smolensk training center

■ A massive shutdown of the steam generators occurred from 1987 to 1991

■ In the first quarter of 1997, damage to the steam generator in the second

Leningrad accident

The Chernobyl accident, because of its borrifying magnitude, has overshadowed other serious accidents that occurred in Soviet reactors, such as this 1975 Leningrad *accident, virtually unknown outside of Russia. The accident followed two serious incidents at the plant in January and February 1974.Four RBMK reactors are in operation at the Leningrad nuclear power plant, the first dating to 1970*

On 30 November 1975. an accident occurred at the first reactor of the Leningrad nuclear power plant, which involved a large release of radioactive materials. The accident was caused by a fuel rod that split open in one of the 1693 channels leading to partial destruction of the reactor's active zone. 1.5 million curies of radioactivity were released into the environment. Immediately after the accident, the background level of radiation

er of Sosnovy Bor [the suburb of

' where the nuclear power plant is

eached 8 roentgen. Residents of

Bor and the surrounding areas were

ıed of the accident. The first

f it occurred in March 1976 at the

f foreign Affairs, when Prime

\ Kosygin mentioned inquiries by

ı and Finnish governments

increases in background radiation

ıin their countries

reactor caused localized contamination of 30 m^2 of the ceiling of the machine room which exceeded the regulatory limit (up to 180 microR/h).

■ On June 26, 1993, eleven control rods in the second reactor became jammed during a safety test that was conducted during a repair stoppage. The reactor was on "hot" standby before repairs were to begin. The temperature of the primary cooling circuit was 280 degrees C, the pressure 160 kg/cm^2. While the safety test was being performed, eleven control rods got stuck in an intermediate position in the lower zone. The incident corresponded to Level 2 on the INES scale.

Other operating VVER -1000 reactors in Russia

Two VVER-1000 reactors are operating at the Kalinin NPP, located near the town of Udomlya, [north of Moscow). The first reactor began operating in 1984, and the second in 1986. A third reactor of the same type is under construction, with start-up planned afer 2002. Construction of a fourth reactor was stopped at the end of 1992, following a governmental decree.

Among the most serious incidents that have occurred at the plant are:

■ On 1 July 1992, localized radioactive contamination of the ground adjoining the first reactor at the plant was discovered when a pit was dug in preparation for enlargement of the building.

■ In 1994, two workers received doses exceeding the allowable limit (5 rem) and two others exceeded the regulatory limit (3 rem) while doing repair work.

Source: Vladimir Kuznetsov, Russian Atomic Energy: Yesterday. Today and Tomorrow (Moscow: Golos-Press, 2000),

● Leaked Documents Show Russian Nuclear Safety Shaky...

Confidential governmental documents, released by Russian environmental organizations Eco Defense! and the anti-nuclear campaign of the Socio-Ecological Union in May, show that the level of safety at nuclear power plants is dangerously low in Russia.

The first, a report by the Ministry of Atomic Power (Minatom) dated March 31, 2000, was prepared for a meeting in the closed city of Snezhinsk attended by President Vladimir Putin. The second is a report from the Nuclear Inspectorate (GAN) on nuclear and radiation safety in Russia in 1999, According to both documents, there were 840 cases of violation of nuclear safety norms and rules at Russian nuclear power plants in 1999.

For longtime, Russian nuclear plants were serving both military and civil purposes without special legislation. Presently the equipment at Russia's nuclear power reactors is too old to operate normally, and their design is outdated, warns Vladimir Slivyak, antinuclear campaigner for Eco Defense! and the Socio-Ecological Union. "Nuclear reactors of the first and second generations must be shut down according to adopted safety rules in Russia, but there is no technical experience and nor finances to do that," says Slivyak.

Moreover construction of Soviet designed reactors continues - an RRMK graphite-moderated reactor at Kursk and two VVER-1000s light water reactors at Kalinin and Rostov

...Yet Minatom Unveils Plans to Build 23 Additional Reactors and Import Nuclear Waste

Russia's Minister for Atomic Power, Dr. Evgeny Adamov announced on May 25 plans to build 23 new nuclear reactors by 2020 and to change Russian law to allow the import of nuclear waste, Russia currently operates 29 nuclear power plants.

These plans are a part of the Ministry of Atomic Energy's (Minatom) new program of nuclear development for the next 50 years, presented to the government of President Vladimir Putin. The text of Adamov's speech, obtained by environmental groups, proposes decreasing consumption of natural gas and increasing nuclear power generation to replace natural gas.

In his speech, Adamov's argument is that Russia will run out of natural uranium in 60 years unless government agrees to his proposed strategy.

Investment needed for implementing of this strategy is US$32 billion. According to the text of Adamov's speech, expenses will be covered by increasing prices for electricity and import of nuclear waste from all over the world to Russia, requiring a change in Russian environmental law. This is not the Russian government's first look at changing the law governing import of nuclear waste. In February and September 1999, the State Duma (Parliament) considered measures favoring spent fuel imports.

The amount of spent nuclear fuel accumulated in Russia is currently about 14,000 tons. Minatom's new strategy allocates only about US$3.6 billion over 30 years for nuclear waste management.

—Environmental New Service, May 2000

The Post Soviet "Democratic" State

Abuses against anti-nuclar activists in Russia

On July 2, 1999, Aleksandr Nikitin, a former Soviet submarine captain, was charged for the eighth time with espionage for blowing the whistle on illegal nuclear waste dumping. Although he had already been acquitted several times already on the same charges, Russia's FSB (previously the KGB) continued to press the case against the former Naval officer, relying *on* secret decrees given retroactive force.

in "The Russian Northern Fleet: Sources of Radioactive Contamination." a report he co-authored with the Norwegian Bellona Foundation, Nikitin helped document the problems of radioactive pollution from mothballed nuclear submarines. "Without international cooperation and financing," the report warns, "a grave situation could arise which can be pictured as a Chernobyl in slow notion If safety measures are not implemented, major accidents and the release of fissile material will be unavoidable."

Because he wrote two chapters in the report - a report that contained information easily garnered from public sources - Nikitin was persistently harassed. His home and office were bugged, his car was routinely followed and vandalized, and his lawyers were harassed by the Russian secret police. His trial began in late November. Nikitin was acquitted of high treason on December 29, in part thanks to Russian and international human rights and environmental activists who had been working on his behalf. The judge ruled that there was no legal basis for the FSB's charges and criticized the manner in which the investigations had been carried out. The Federal Security Bureau has the right to appeal the ruling to Russia's high court.

Pattern of Persecation

Aleksandr Nikitin's case is not an isolated incident, but only the most well-known example of a larger trend of harassment of environmental activists in Russia

Military weapons, radioactive pollution being a byproduct, remain one of Russia's few major exports. Neither the military, nor its client industries want environmentalists peeking into the dark corners. Despite constitutional provisions that recognize the right to a favorable environment, the right to reliable information about its condition, and compensation for damage to health or property caused by ecological violations, the Russian government actively stifles the freedom of expression for environmental activists working on Russian nuclear and toxic contamination

Navy captain Grigory Pasko, was arrested and convicted for his efforts to expose nuclear waste dumping and radioactive pollution problems caused by Russia's decaying nuclear submarines in the Russian Far Eastern Fleet. Although he was later released, the military journalist was found guilty of abuse of office for personal gain and violating the interests of society and the state.

According to reports published in the Ottawa Citizen and the St. Petersburg Times in July 1999. The FSB raided the laboratory of scientist Vladimir Soifer. ending his scientific research into contamination of the Pacific Ocean by radioactive waste.

On September 6, 1999, Socio-Ecological Union and Eco-Defense! anti-nuclear campaigner Vladimir Slivyak was arrested near his Moscow home by the city's criminal police. Slivyak was accused of being a terrorist [specifically, taking part in the bombings of several Moscow apartments, which were also widely reported in the media as the work of Chechen separatists). The police waived a bag of marijuana in front of his face and threatened him with additional drug charges unless he cooperated In December, EcoDefense' campaigner Alisa Nikulina was summoned to the ESB headquarters at Lubyanka and questioned for several hours as a "witness" to the apartment bombings

In the fall of 1999. three members of the Chelyabinsk-based Movement for Nuclear Safety (MNS) were arrested after a demonstration highlighting the degredation of the Techa River, which has been severely contaminated by the operation *of* the "Mayak" plutonium production plant Earlier this year, the governmental Committee for the Environment brought a lawsuit against MNS and a local newspaper for libel The defendants were exonerated in court

In the fall of 1999. the ESB confiscated a computer and research materials from Joshua Handler, a PhD candidate at Princeton University and former Greenpeace campaigner. Handler is writing his dissertation onstrategic nuclear weapons

Igor Sutyagin, a researcher at the Russian Institute for US and Canadian Studies with whom Handler was working. was arrested in October 1999 Sutyagin has published on military and arms control issues, and was involved in a project examining civilian-military relations and the role of the military in Russian society He is currently in a security services prison awaiting trial, and has been denied visits for the past four months His initial six-month jail term was extended by three months *(in* violation of Russian law) on the grounds that inquiry into his case had not been completed. The FSB has not yet Tiled formal charges against Sutyagin. but has announced that it will accuse him of

espionage and treason. He is facing a potential sentence of 12-20 years.

In 1998, the Russian Federal Justice Department enacted a decree that allows state authorities to deny official registration of many human rights and environmental groups. In August 1999, the Moscow City Court upheld a lower court's ruling to deny official registration for the Moscow-based Advocacy Coalition for Environment and Human Rights led by Alexei Yablokov, a former environmental advisor to President Yeltsin and leader of Russia's environmental movement. A Russian Justice Department official claimed that "the protection of human rights in the state is the responsibility of the state itself."

In early 1999, the same department refused registration to seven other Moscow-based human rights groups, including the Glasnost Foundation, on the same grounds. In February 2000, the police ordered that the Moscow office of Greenpeace International be sealed off because of failure to get official permission for a recent renovation, but retreated when asked to produce an official order.

In spring 2000, regional prosecuters conducted audits of a number of environmental organizations, including Chelyabinsk-based "Techa," which addresses radioactive contamination resulting from operation of the Mayak nuclear plant, St. Petersburg-based "Green World," which monitors the Leningrad nuclear power plant and recently campaigned against construction of a nearby oil terminal, and Sakhalin Ecology Watch.

"Our freedom of speech is already much smaller than in the early '90s," says human rights advocate and attorney Yuri Schmidt. "It will become worse. If you don't act now, tomorrow we will wake up in the USSR."

Based on
Amnesty International Report

Unintended Consequences
The Moscow Plutonium Deal

At their summit in Moscow in June, U.S. President Bill Clinton and Russian President Vladimir Putin initialed a landmark deal: The United States and Russia pledged to destroy 34 metric tons of weapons-grade plutonium, largely by using it for fuel in civilian nuclear reactors. The agreement suggests a showcase of cooperation between the two nations, eliminating fuel that could be used in weapons of mass destruction.

But over the long term, this agreement may, in fact, worsen the problem of nuclear proliferation. The Clinton-Putin agreement will create a large-scale global civilian demand for and supply of plutonium, a prime component in the construction of nuclear weapons.

According to the text of the agreement, Russia will turn its share of the plutonium into a fuel called MOX, for use in nuclear reactors both in Russia and abroad. The United States is adopting a similar plan for 25.5 metric tons of its plutonium; the remainder will be sealed in glass and buried. The United States will pay for its portion, $4 billion, by itself, as well as sink $200 million into Russia's civilian nuclear industry. At the July summit in Okinawa, the United States and Russia will ask the G7 to cough up the remaining $1.55 billion for the Russian program .

Much of the MOX will be used in converted Russian reactors, some of which are more than 20 years old. A Chernobyl-like accident involving plutonium would be far more serious than the original one, which involved uranium.

The plan begins with a total of 10 American and Russian reactors. But it would take these reactors 20 years to use all 1,000 metric tons of MOX the agreement would produce. If the agreement is extended to the rest of the American and Russian plutonium stockpile, this could exceed 60 years. This is why the agreement would bring other countries on board. Belgium, Canada, France, Germany, Japan, Ukraine and the United Kingdom have all expressed an interest.

By converting plutonium to MOX, the American-Russia agreement would help, an ailing American uranium nuclear industry. In order to transform waste plutonium into MOX, it must first be purified. This purified plutonium can be used for nuclear weapons. To counter this concern, the United States insists it will decommission all parts of its new plutonium industry once the weapons-grade plutonium is destroyed, thus ending the proliferation threat. But Russia has made it clear it intends to continue using plutonium for fuel. So have other countries. Japan plans to have one-third of its 53 reactors using MOX by 2010. There are already 30 reactors in Europe licensed to use the plutonium-based fuel. All are simply waiting for a steady supply. The Clinton-Putin deal will build the processing centers (several in Russia) necessary to ensure that supply.

On average, every reactor that runs on MOX fuel will require four to six metric tons of MOX which contains 250 to 300 kilograms of weapons-grade plutonium a year. According to the US Department of Energy this is enough raw plutonium to make about 55 small nuclear weapons. And with 77 metric tons of new civilian plutonium created every year, the chances of losing a few kilograms here and there are immense.

Half a Century of Dumping

Russia's "Plutonium Cities"

Russia has produced at least 200 tons of plutonium at three sites over the last half-century, with disastrous consequences for the population and the natural environment of the Urals and Siberian legions. Billions of curies of waste have been dumped into rivers and reservoirs, released into the air, and injected into the ground. The "Mayak" facility (also known by the Soviet code name for the nearby closed city that houses its workers and their families: Chelyabinsk-65, later renamed "Ozyorsk") is located in the Ural Mountains region near the industrial city of Chelyabinsk. It is the oldest and largest plutonium production centre in Russia. The surrounding territory has become contaminated with large quantities of caesium, strontium, and plutonium as a result of the plant's activities. Reprocessing activities at Mayak have created large volumes of liquid radioactive waste, a great deal of which has been dumped into local bodies of water. Mayak is located at the headwaters of the Techa river, which eventually flows into the Ob, a great Siberian river that in turn flows into the Arctic Ocean. From March 1949 to November 1951, 2.8 million curies of high-level reprocessing wastes were dumped into the Techa River, affecting 124,000 people living in 41 settlements along the river. Dumping of low- and medium-level wastes continued until the mid-1950s. Traces of radioactivity from the dumping were detected in the Arctic, more than a thousand kilometres away. Authorities prohibited use of river water after 1951, but because they failed to provide an explanation, local people continued to use the river for fishing, bathing, watering crops and animals.

Medium- and low-level wastes have also been dumped into natural and artificial reservoirs, which are vulnerable to floods and droughts. Among them is probably the most radioactive body of water on earth. Lake Karachay. 120 million curies of medium-level reprocessing wastes were dumped here, much of which has settled into the sediments at the bottom of the reservoir. Following partial drying of the lake caused by a drought in 1967, strong winds carried 600 curies of radioactive dust into neighbouring areas. Since the 1967 incident, work has been carried on to fill in Lake Karachay with dirt, rocks and hollow concrete blocks. However, this hasn't ended the threat of seepage from the reservoir. Additional reservoirs, some of which were created through the construction of dams along the Techa River from 1949 to 1964. contain additional hundreds of millions of curies of radioactive wastes. Filtration from the reservoirs has contaminated ground water to a depth of 100 meters over an area of 10 km^2, and continues to spread.

More radioactivity has been pumped underground in Russia than was released by Cbernobyl in the hope that it mould remain isolated for ever. If the hope provesoptimistic... Well,Russia is a vast country.

Beginning in 1951, high-level liquid reprocessing wastes were stored in large stainless steel tanks. One of these exploded in 1957, in the famous Kyshtym accident, which was not officially admitted until 1989. An estimated 20 million curies of radioactivity were released in the explosion. More recently, some of these wastes have been vitrified (encased in glass) for long-term storage.

About 7500 residents were evacuated from villages along the Techa River between 1953 and 1960. Another 10,700 people were relocated after the 1957 accident, but many after a delay of one or two years. The village of Muslyumovo. located 78 kilometres downstream from the plant, has been one of the most heavily affected by the contamination of the Techa Readings taken there in 1992 showed levels of 300 to 500 microrads per hour, and readings even further downstream showed levels of 8.000 microrads per hour. The 3000 residents were never evacuated. A local community group has named itself "White Mice." reflecting a feeling that residents have been treated as material for radiation experiments Even after passage of a 1992 law to help those affected by nuclear contamination (known as the Chernobyl Law) Muslyumovo residents face an uphill battle Repeated promises for resettlement of those living closest to the river have failed to materialise. Furthermore, under the Chernobyl Law, radiation victims lose their right to health benefits and other compensation once they leave the contaminated area, and thus face a cruel trade off between their children's' health and economic survival. An important victory came in 1998, when, after several unsuccessful lawsuits, residents won the first-ever settlement against Mayak. on behalf of the family of a young boy with leukaemia.

Plutonium separation from spent fuel continues to the present at the RT-I plant Fuel imported from Ukrainian, Finnish, and Hungarian reactors has been reprocessed alongside Russian waste, and Minatom continues to seek foreign contracts for waste importation and reprocessing. At least 30 tons of separated plutonium is stored at Mayak. The plant also contains two small operating mixed-oxide (MOX) fuel production facilities. Under a recent US-Russian agreement (SEE P. 8], these facilities will be developed to fabricate MOX fuel out of surplus plutonium from dismantled nuclear weapons. Construction of three fast breeder reactors has been

proposed at the neighbouring South Urals NPP, Work at the site began in 1984, and was stopped in 1987 due to lack of funds and public opposition. In spite of a referendum held in March 1991, in which 75% of voters opposed the plant, the Ministry of Atomic Energy (Minatom) has included construction of the plant in its "strategy for atomic development in Russia, 2000-2050," and is seeking funds in federal and local budgets [SEE P. 6 FOR MORE INFORMATION ON REACTOR CONSTRUCTION PLANS].

The Mining-Chemical Complex (also known as Krasnoyarsk-26 or Zheleznogorsk) is located inside of a mountain along the Yenisey River, one of the major rivers in Siberia that flows into the Arctic Ocean. More than 65,000 prisoners and 100,000 soldiers were involved in digging the enormous caverns which contain reactors and a reprocessing plant. One reactor is still operating, ostensibly to provide power and heat to Zheleznogorsk residents (although a large dam less than 100 km upstream on the Yenisey is only partially in use because of lack of demand). Two other reactors at the plant were shut down in 1992. These were "once-through" reactors, which drew their cooling water from the Yenisey and then dumped it back without any treatment, severely contaminating the river. Carried hundreds of kilometres by the current, radioactivity accumulated in sediments, fish and plants along the river.

The village of Atamanovo is located six kilometres downstream from the plant, and next door is a summer camp to which 5,000 children came every summer during Soviet times. Many local people have ignored prohibitions on swimming and fishing within five kilometres of the plant's discharge pipes.

Nearby and above-ground is the site of the proposed RT-2 plant, designed to reprocess fuel from VVER-1000 light water reactors. Construction on the plant has been sporadic since 1989 due to a lack of funds and ongoing widespread public opposition. A local campaign for a referendum on construction of the plant in the mid-1990s failed on a technicality: after more than the requisite 100,000 signatures to put a question on the ballot had been gathered, local authorities determined that construction of a federal facility could not be decided through a local referendum. Spent fuel from VVER-1000 reactors has been stored at the site since 1985.

Minatom has repeatedly sought foreign reprocessing contracts to help finance construction of RT-2. More recently, nuclear industry proponents have tried to alter Russia's Environmental Protection Law to allow long-term storage of foreign waste, as a means of raising funds [SEE P. 15 FOR ANOTHER WASTE IMPORT EFFORT]. (The law has been interpreted to allow spent fuel importation for reprocessing, because Minatom argues that it represents not a waste, but a valuable resource.) Recent proposals have suggested granite beds in the Krasnoyarsk region as a long-term storage site for this waste. Local environmentalists support construction of a geologic repository as an alternative to spent fuel reprocessing, but argue that storage should be limited to Russian and Ukrainian spent fuel which is already slated to come to the region.

The Siberian Chemical Complex (also Tomsk-7 or Seversk) is located less than 10 kilometres from the graceful old Siberian university town of Tomsk, on the Tom River, which flows into the Ob River. The site includes five reactors (two of which continue to operate, providing electricity and heat to both the closed city of Seversk and Tomsk proper), uranium enrichment and processing facilities, plutonium and tritium separation facilities, and plants for construction of nuclear warhead components. Planning for construction of high-temperature gas reactors at the site began in the mid-1990s, but remains in the research stage. Plans for a large-scale storage facility for plutonium and highly-enriched uranium, initiated in 1992, have been hampered by public opposition, arising from the fears about the danger posed by such a concentration of deadly materials and concerns that storage of these materials will lead to on-site processing, such as production of MOX fuel.

In April 1993, a tank containing plutonium, uranium, and other radioactive materials exploded, blowing a hole through the roof of the room where the tank was located, and causing a wall to collapse. Authorities waited a week before evacuating children from the village of Georgievka, the settlement most affected by the accident.

Liquid reprocessing wastes at Krasnoyarsk-26 and Tomsk-7 have been injected without any treatment into supposedly isolated wells formed by earth "collection layers" several hundred meters underground. 46 million cubic meters of waste with an activity of more than 2 billion curies have been injected at these sites, and at a third storage area near the plutonium research facility in Dimitrovgrad. In Tomsk, the injection layers are located just tens of meters above the area from which drinking water is drawn. Less is known about waste disposal practices at these sites prior to the advent of deep-well injection in the 1960s, but at least some portion of the wastes were dumped into above-ground reservoirs, as they were at Mayak.

The large-scale contamination of the environment resulting from careless waste dumping has been devastating to people living near the plutonium production plants. Health studies of Mayak workers and the surrounding population have been undertaken by the Institute of Biophysics (a division of Minatom). Existing evidence shows that cumulative exposure for Chelyabinsk-65 workers are much higher than for any other studied group of workers, and average individual doses for large groups of workers and some groups of residents exceed those recorded for either atomic bomb survivors (on average). But information on the resulting health impact is very unreliable because of a history of under-reporting of radiation-related disease, continued secrecy surrounding official medicafrecords, and deficiencies in existing health studies. Little information is available on the health situation of residents living near Krasnoyarsk-26 and Tomsk-7.

Contamination Threatens the Ob

Novosibirsk is one of the largest cities in Siberia and in Russia, with population exceeding one and a half million people. It is crossed by the Trans-Siberian railroad, which serves as the major communication line between central and estern parts of the country and Europe, and Far East. China and Mongolia. Novosibirsk is situated on the banks of Obseriver, which carries its waters all the way down to the Arctic

Novosibirsk is a host of several dozens of large industrial enterprises. In this article, we will deal with one of them Novosibirsk Chemical Concentrate plant - NCCP for short The plant is located on the northern fringe of the city, sonic 8 kilometres from the centre of the town NCCP was constructed 50 years ago for enrichment of uranium ores. Later, it was re-designed to produce nuclear fuel. In the Soviet Union, the plant used to be a monopoly, producing nuclear fuel for most commercial reactors *of* the country, as well as for many nuclear plants in the Eastern block countries. Presently, it keeps its leading position, shipping nuclear fuel to most Russian and some East-European reactors. Recently, the plant has signed a contract with China.

The character of the NCCP production is similar to that of the nuclear fuel plant in lokaimura village in Japan, the one which in October 1999 became the scene of that country's worst nuclear incident related to nuclear criticality. Two years ago, Novosibirsk Chemical Concentrate plant had similar incident. Fortunately, the release of radioactivity was much smaller.

For many years in Soviet Union, all works related to radioactive materials were classified as top-secret. For several decades, vast majority of the inhabitants of Novosibirsk had no idea that behind an ineffective sign "NCCP", right within city limits, was a huge nuclear enterprise.

Information began to emerge only with the beginning of Gorbachev's Perestroika, Improved availability of the information revealed another troubling problem. It soon become apparent that the data related to the environmental impact of the plant were virtually non-existent. Our non-government Institute "Siberian Scientists for Global Responsibility" has long been planing environmental inspection of the territory. adjacent to the facility. However, we were held back by the lack of suitable equipment

A fuel fabritation plant is situated within any limits causing *radioditire containnation of the surrounding, with nosigns or warnings posted. Hyderabad and Norosibirsk, could beetwin cities.*

We realised, that in order to work on the territory where one can encounter radioactivity, reliable dosimeters are vital, Luckily, in September 1999, two Americans from the "Government Accountability Project" visited Novosibirsk Louis Clark and lorn Carpenter had with them a dosimeter that allows measurement of alpha, beta and gamma radioactivity. Taking an advantage of this visit, we made a reconnaissance trip to the NCCP area When they returned from Novosibirsk, lorn and Luis left their dosimeter with us saying "you guys, need it more than we do" NCCP pumps its liquid waste through a four kilometre-long pulp feed-line into a tailing pond. There, the waste is discharged into a reservoir, supported by an earth-fill dam. About 20 kilometres downstream, the reservoir-hosting creek, Pashenka, flows in to the Ob' river

According to official estimates, there are presently several metric tons of uranium accumulated in the bottom sediments of the tailing-pond. For may years, it used to be believed that loamy rocks that constitute the bottom of the pond and the bods of the dam absorb radioactive materials, purify the water, and do not permit the migration of radionuclides downstream

So. we readied our dosimeters and set off to carry out an independent examination of the tailing dump ground. The pulp leed-line pumps tens to hundreds of cubro meters of radioactive sludge per day. The pipe is not marked. There is no fence around it and neither is it guarded. There are no radiation signs posted anywhere in the vicinity We made a brief stop near the pipe, and immediately found heavels contaminated soil underneath

For about *one* kilometre. the pulp feed-line goes within few meters from a major highway connecting Novosibirsk with Tomsk and this is just a few hundred meters from the Trans-Siberian railway tracks Even inside the car, our dosimeters recorded radiation twice the background Only near the police station the pipe is shielded by thin metal sheets

Our initial plan was to examine part of the pond adjacent to the dam. and to collect samples of the bottom sediments and water from observation wells drilled in the dam However, our very first readings forced us to change our plans

A concrete structure, which we spotted, turned out to be an open flood spillway During spring snowmelt, when the water level in the pond rises by more than one meter, the water discharges through a system of pipes directly to the creek valley downstream of the dam Near the spillway notch, we *found* heavily contaminated soil - up to 1000 mcR/h or about 100 times the background. This meant that in spring time. radioactive water from the pond could discharge in the Pashenka creek valley So.

we decided to check radiation levels at the other end of the spillway.

In the service pit, our dosimeter showed elevated levels radioactivity. Also elevated were readings near the spillway pipe outlet on the flood-plain. A yet more shocking discovery lay ahead of us. We found that the spillway pipe, through which even in the most dry season of the year their was a flow of about I litre of water permimum was not the sole water flow path through the dam. In several places, we found small springs seeping from underneath the dam. Such seepage, is an indication of degrading dam stability. The water in the dam serves as a lubricant, so in spring, or after heavy rains, the dam may not endure water head and may one day lose its integrity. Having found an uncontrolled seepage of water from the pond that stores several tons of uranium, we decided to check contamination of the Pashenka creek flood-plane downstream from the dam. Another discovery awaited us there. On the reedy flood-plane, our dosimeters showed 3000 mcR/h - 300 times the background.

During the following days we surveyed this swampy and reedy valley. Having collected more than a thousand measurements, we determined that the radioactive contamination extends along the valley for almost four kilometres. The inescapable conclusion is that large amounts of radionuclides have accumulated outside the tailing pond of the Novosibirsk Chemical Concentrate Plant, and reside on the Pashenka creek flood-plane as a man-made radioactive body. This body 'lives" in accord with its own natural laws, and is not confined by any engineering barriers. Radionuclides that contaminated the flood-plane will remain radioactive for hundreds million years. Contamination zone is slowly moving downstream. We estimate that it may reach the main channel of Ob river within several decades.

Based on the film script of "Leaky Dam Where does radiation go? " Produced by Siberian Scientists for Global Responsibility

The Nuclear Mindset

A sophisticated approach to environmental concerns from Russia's top nuclear official

"in *Russia, ...Me ask ourselves, Is It possible for the world to have large scale nuclear energy? By large scale, l do not mean the same as we have now, with around 5 percent to 7 percent of the total energy balance. This is a very small contribution to resolving the energy problem, large scale is, for eiample, 30 percent,* 40 *percent or 50 percent.* At *this scale we could really resolve not only the energy demand problem, but also environmental problems." "The question Is, if we have such a level of nuclear energy, is il possible to manage the waste, particularly the spent fuel? Can we keep the same level of radioactivity as we had before we developed nuclear at all? The answer is yes, if we have the closed fuel cycle, we have the possibility to keep the same level of radioactivity. This means achieving a balance between the radioactivity of the waste being buried and of the uranium extracted from the earth."*

—Evgeny Adamov, Russian Minister of Atomic Energy from a September 1999 speech to the Uranium Institute, London

MAYING WITH NUCLEAR FIRE

LESSONS FROM THE 'KURSK' CATASTROPHE

In March 1994, Aleksandr Nikitin, then a 44 year-old former submarine captain, published a report on the appalling state of safety in Russia's Northern Fleet, which handles the bulk of the country's nuclear-powered submarines. Using publicly available information, he painstakingly documented the Fleet's declining operation and maintenance standards, accumulating and overflowing radioactive waste, steeply falling budgets and morale, and the growing scarcity of spares, and warned of a series of disasters. Nikitin was arrested in February 1995 and charged with espionage and treason, punishable with death. Detained for months without trial, Nikitin was not allowed to choose his own lawyer. Finally, last year, he was acquitted by the courts, but now faces another trial on the same charge.

Welcome to the Kafkaesque world of nuclear weapons and submarines! The Kursk tragedy hasn't ended. The submarine's two nuclear reactors, with a 380 MW output, still lie 108 metres deep inside a damage hull amidst torpedoes, high explosives and other hazardous material. They contain an estimated 1,200 kg of highly enriched uranium, mostly U-235, with a half-life of a mind-boggling 710 million years. Therefore, huge quantities of the radioisotope will continue to menace the marine environment and humans for millions of generations to come. Even assuming that the reactors were not damaged by the explosives that sank the sub, which seems unlikely, dismantling the potent cocktail of uranium, hundreds of fission products including deadly plutonium, and chemical explosives, will entail large radioactivity exposures. The job will be incomparably more onerous than accessing the sub's rear hatch—a week-long, super-expensive, multi-national effort. Abandoning the sub would mean leaching radioactivity into the environment.

The Kursk is only one disaster that Nikitin forecast. "Much bigger ones are waiting to happen around Murmansk and Severomorsk", he told me two months ago in Stockholm. This severely depressed area of the Kola Peninsula holds 21,000 nuclear fuel assemblies and one-fifth of the world's 1,200 nuclear reactors—in patently unsafe, rapidly deteriorating, conditions. More than 200 reactors are literally rotting aboard 110 submarines which have been taken out of service. (About 180 Russian subs have been decommissioned). The Fleet, which receives less than half its designated minimum budget, has no money to dismantle the nuclear cores. Indeed, "it often lacks money to buy rations for the crew", says Nikitin, whose case this writer has followed since 1995. The result: scores of subs are corroding and sinking as their reactor compartments fill with water—presaging an ecological catastrophe. As bankrupt Russia's military budgets shrink—now to less than half the level of India's—training, maintenance and safety norms plummet further, making disaster likelier in the world's largest nuclear arsenal.

Russia's specific troubles are only *one* part of the nuclear submarine story. The other two parts are generic. Nuclear submarines everywhere are extraordinarily disaster-prone. And nuclear establishments everywhere operate secretively, irrationally and in paranoid ways. Nuclear subs have had serious accidents ever since they drove the Cold War's most furious phase of arms racing, in which safety hardly mattered. Today, wreckages of American and British as well as Russian subs lie on the earth's ocean floor. There have been numerous accidents aboard US, France, British and Russian submarines. "Greenpeace" has documented 121 "incidents" in the last case, 10 of which caused reactor damage. There were also two core meltdowns — a nuclear reactor's maximum accident —in 1979 and 1989. Nuclear subs have inherent safety problems because they (like bombs) pack huge amounts of energy in small volumes and operate in conditions much harsher than civilian power reactors, themselves seriously accident-prone. A small error gets magnified into a big crisis.

The authorities' handling of the Kursk crisis further compounded the catastrophe They first denied, and then tried to deflect attention from, its gravity. For four critical days, they refused offers of foreign assistance out of hubris and "national pride". President Putin refused to cut short his holiday. The British and Norwegians too delayed sending in assistance. Russia's nucleocracy refused to disclose relevant information, including the sailors' names, the sub's location, and the accidents circumstances. According to independent sources, there were two internal explosions, not a major collision, as claimed. Journalists had to bribe naval officers to get the victims' list. Their number too was raised without explanation from 116 to 118. When relations confronted them, the bosses used KGB/CIA-style methods: forcibly injecting sedatives to silence questioners

Such sordid behaviour is typical of all nuclear establishments Whether in the US or USSR, France or Iraq, China or Pakistan, these all-male "Dr Strange love outfits" a*re* marked by excessive secrecy and dominated by unaccountable "experts" who cynically exploit their privileged access to information. Secrecy cuts across the democracy-dictatorship barrier. For 40 years, the US refused to divulge facts about its terrifying radiation experiments on humans, including injections of poisons. The N-5 have always suppressed or denied unpleasant

facts about their nuclear programmes. Transparency and nuclear activities just don't jell. Nuclearism, with its bellicose "national security" mindset, its crude male-supremacism, its coarse social-Darwinism, its abiding faith in violence and mass destruction, has little use for effete, "effeminate" or "idealistic" things like human rights, social/gender justice or decency. Nuclear weapons and democratic accountability are mutually antagonistic.

All this applies a fortiori to India. The Atomic Energy Act (1962) betrays utter contempt for accountability. It allows arbitrary suppression of all information —patently unconstitutional, according to V.K. Krishna Iyer. The atomic energy department (DAE) is easily one of our most secretive. It has much to hide: uranium mining hazards in Jadugoda, excessive irradiation of power-plant workers, waste mismanagement, numbers regarding explosive yields...Worse, we have our own Nikitin: former Captain B.K. Subba Rao who too was charged in 1988 with spying and jailed for 20 months—until fully exonerated by three courts. His real crime? Questioning the DAE's nuclear sub (Advanced Technology Vessel) project, a spectacular Rs. 2,000 crore failure. Evidence of "espionage"? His IIT-Bombay Ph.D thesis.

However, we have an additional, special problem: unacceptably poor, sub-Russian safety and reliability in India's nuclear and defence establishments—witness 202 Air Force plane crashes in nine years, the Main Battle Tank project mess, the Purulia arms drop, the distinction of having six of the world's 10 dirtiest nuclear reactors; or for that matter, industrial and road accident rates four to 12 times the OECD average. It won't do to deny, Russian-style, India's poor safety culture and disaster-proneness. We can't even run power-grids and surface transport safely. It would be disastrous to let hubris drive us towards nuclear catastrophe. We must freeze our nuclear and missile programmes and return to the global disarmament agenda.

Praful Bidwai
Times of India 30.8. '00

The Nuclear Mindset (Indian Version)

The Nuclear Power Corporation of India Ltd. (NPCIL)has drawn up Rs. 100cr. estimates for establishing infrastructural facilities at Kudankulam where the Department of Atomic Energy has proposed to establish water cooled and water resistant (VVER) nuclear reactors with Russian assistance.

Mr. V. K. Chaturvedi, chairman and managing director of NPCIL told reporters at the site near here on Sunday that the estimates had been submitted to the Atomic Enem Commission for approval and funds would be released soon. Maintaining that funds could never be a constraint in establishing the atomic power plant, the CMD said the construction work would commence from January, 2001 following the receipt of the Detailed Project Report (DPR) being prepared by the Russian agency, Atomen Ergo Export (AEE), in December this year.

The DPR would be implemented after scrutiny by the Atomic Energy Regulatory Board. The actual construction of the reactors would begin from 2002 onwards, he said, adding that the first reactor would be commissioned by 2007 and the second in 2008.

The Kudankulam project had been included in the Vision 2020 and it would help in generating extra power. The site acquired by the Corporation was sufficient for establishing six nuclear reactors and it had been planned to set up four reactors of 1000 mw capacity each. The reactors would be commissioned in a phased manner to ensure that the power generation capacity doubled once in seven years. About 50 Russian scientists initially and totally 700 in addition to 1,500 Indian scientists would be involved in constructing the reactors.

Asked if a jetty would be constructed at Kudankulam for importing the required material from Russia, Mr. Chaturvedi said the proposal had been shelved and instead they were concentrating on developing the port at Tuticorin. To another query on the dependence of potable water for cooling the reactors, Mr. Chaturvedi said though about 3.5 casees of water was likely to be drawn from the Pechiparai reservoir, the authorities would make alternative arrangements such as sinking bore wells and installing desalination plants.

The Hindu August 29, 2000

Vast Quantities of Potable Drinking Water for the Nuclear Monster

Promises of Desalination for the Public

Dump, Dump,... Russia is a Vast Land

Russian Weapons Lab Signs Secret Deal to Import Nuclear Waste

According to confidential documents, obtained by ECODEFENSE!, Russian officials are planning to approve a dump site for Taiwanese and Japanese nuclear jauste on Simushir Island (one of the chalin Islands, located in the Russian Far East). The project is being organized by the Kurchatov Institute (Kl), Russia's largest nuclear weapons laboratory, and Asia Tat Trading Co Ltd, which manages radioactive waste in Taiwan and Japan. Profits are estimated by the organizers at US$ 10 billion.

Taiwan Power Company (Taipower) has confirmed that it had signed an agreement with a Russian weapons center to store its nuclear waste, but denies a Japanese firm is involved in the deal. Instead, Taipower insisted no third party was involved, but confirmed a [redacted]morandum had been signed with a Russian organization to transfer waste to country.

"It's just a preliminary plan involving 5,000 barrels of nuclear waste,'* said Huang Huei-yu, division head of Taipower's public affairs department. "The idea of shipping waste to Russia has been held up by its laws that ban the import of any nuclear waste," said Huang.

But according to Taipower documents — written in Chinese and publicized by ECODEFENSE! on the Internet — the project includes technology provided by ATT. The documents, dated May 19, 1998, show that 200,000 barrels of Taipower's nuclear waste will be shipped to Russia via Japan within 10 years. Taipower will pay NTSS00 million, or an average of NT$4.000 per barrel.

Benefits to the three parties were also mentioned in these document!. For Taiwan, problems caused by the lack of dump sites for nuclear waste would be solved, while thousands of job opportunities would be created for Russians. As for Japan, documents show that as the agent, ATT would make a handsome profit.

According to the documents, KI has promised to lobby for changes in Russian legislation in exchange for financial support of Asia Tat Trading Co Ltd. Article 50 of the Russian Law on Environmental Protection Law bans the import of nuclear waste to Russia for storage or dumping.

Poison your land to have the money so that leaders can strull about being a global power! It takes all kinds.

The documents also show that KI is seeking federal funding for the Sakhalin project. in order to avoid problems with Russian legislation, Kl has presented the proposed dump site as urgently needed to manage a large amount of KPs own waste, without mentioning Taiwanese and Japanese wastes. But a memorandum signed by Kl and Asia Tat Trading Co Ltd clearly shows the intent to dump both Russian and Asian (Taiwanese and Japanese) radioactive waste. Construction of the site would cost US$ 2,5 billion. The president has on his desk a decree "On additional efforts for cleaning up radioactive contamination in Russia and improving the security and effectiveness of radioactive waste management** that would clear the way for the Sakhalin dump.

According to the documents, Vice-chairman of the Duma (louver house of Russian parliament) Committee on Environmental Protection Sergey Shahurin asked leaders of the parliamentary fractions to sign letters of support for the presidential decree All fractions of the Duma have lent their support. Mr. Shashurin also requested official permission from Kl to negotiate the Taiwanese waste imports. Official negotiations with Taiwan would violate a 1992 presidential decree that ended diplomatic relations between the countries.

Taipower's Huang said it was too early to say whether the memorandum would become a workable contract.

"Since the uncertainty regarding transporting nuclear waste to other countries continues to exist, Taipower has not given up building a final storage site for its nuclear waste," said Huang, adding that an environmental impact assessment for a disposal site at Wuchiu island, near Kinmen, was scheduled to be filed by the end of this year.

It has been reported that Taipower plans to begin operating the nuclear waste dump in 2012, but that these plans could be affected by local protesters asking for compensation.

Taipower said it was working with other countries, including North Korea and China, to find sites for final disposal.

Revelations of a similar secret agreement with Swiss and German companies, uncovered by Greenpeace International in 1998, caused widespread outrage in Russia.

Sources: ECODEFENSE! and News Agency Staff Reporter Chiu Yu-Tzu, July 6 2000

The Editor's Last Word

Now a days many people ask me quite often, "What's happened to Anumukti. I haven't seen it for a long time." I have run out of excuses. The hard unpalatable truth is that my interest has waned. Most of the people who receive Anumukti never even open the wrapper. (Figuratively speaking since actually Anumukti does not come wrapped.) Of those that do, once in a while glance through it, many can and probably do get most of the information through the electronic media. So what is the point of working hard at getting out a journal which does not cause even a ripple.

But then there are some die-hards who insist that Anumukti must go on. Most of these don't do any thing besides exhortation, nothing practically useful for achieving this goal. But again there are some who are willing to put in the effort to flog and revive dead horses. As they say it takes all kinds. Ms Anita Seth is one of this rare breed, it is entirely due to her efforts that this issue of Anumukti is in your hands. We, the rest of the Anumukti team are thankful to her for the kiss of life.

This issue concentrates on Russia. Russia is a wonderful country. The people are warm, full of life and laughter and able to shrug off difficult times. Very much like Indians. And like us they too have been burdened for long with a political leadership with no vision and no empathy.

But there is one big difference between Russia and India. Russia has a population less than one sixth that of India occupying an area more than six times as large. Except for sunshine it has lot more resources of almost everything and yet it has a declining population with a declining life expectancy. The reasons for this apparent paradox are not very obscure. In the race to be a superpower, the Russian leadership polluted vast regions of this vast land with poisons. Not only radioactivity but chemicals as well. The misery of the people today is a direct result of this short sighted misadventure.

The Indian leadership today too is engaged in a similar quest for 'glory'; for becoming a global power. Like all the rest of this breed they too believe that this power shall come out of a barrel of a gun or rather through the possession of devices of mass destruction. They too are willing to make any sacrifice or rather they are willing to sacrifice the people in the name, of security. Thousands of nuclear weapons, submarines, a vast military infrastructure did not secure Soviet Union. It will not secure India. Security comes from the well being of all the people.

Decline does not always teach wisdom. It certainly hasn't to the Russian leadership. Their solution to the difficult situation facing them is to pollute even larger areas of the country. They want to make Russia the nuclear dustbin of the world. Earn money doing this and build even more nuclear power plants so that the present energy wasteful lifestyle can continue. A Kursk or a Chernobyl once in a while can be shrugged off as an aberration caused by the inevitable human error. The pity is that the elite in India without the vast land resources is also engaged in the same suicidal course importing the very same technology in Koodankulam. Koodamkursk is waiting in the wings.

Surendra Gadekar

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